LISTERS

Geotechnical Consultants

Pye Homes Ltd and The Vanbrugh Unit Trust

Ground Investigation

Land to the East
WOODSTOCK
Oxfordshire
OX20 1QF

Report No: 14.08.005a
October 2014

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1 DOCUMENT RECORD

Report Title	Phase II Ground Investigation Report
Project Title	New Mixed Development
Project Address	Land to the east of Woodstock, Oxfordshire. OX20 1QF
Project Number	14.08.005a
Client Company Name	Pye Homes Ltd. and The Vanbrugh Unit Trust

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Issue No	Date	Status
1	9 October 2014	Preliminary Draft
2	24 October 2014	Final Draft
3	10 November 2014	Final Itemised Report

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2 NON-TECHNICAL SUMMARY

2.1.1 A desk study and ground investigation has been completed at the site to the east of Woodstock. The desk study is included in another report referenced 14.08.005, dated August 2014. The desk study indicated that the site had mainly been agricultural in usage from at least 1880, with a few exceptions. There was an isolation hospital towards the north of the site around the turn of the 19th Century and a small stone quarry to the northeast of the site before 1880. In addition, there were two off-site areas that may have lead to migration on site of ground gas or polluted groundwater; one to the north and one to the southeast. Potential pollution from all of these sources were investigated and no contamination was encountered at any of the locations or from random locations tested across the whole site area. As such, no elevated risk to end users, construction workers or nearby residents was established from the desk study and intrusive investigation.

2.1.2 With regard to ground conditions encountered, Topsoil was encountered at each location from ground level to depths ranging from 0.10m bgl to 0.50m bgl. This was underlain by Cornbrash Formations strata ranging from ground level down to 0.50m bgl towards the southwest of the site; to 4.90m bgl towards the east of the site. These strata consisted of rubbly to intact limestone that could not be penetrated by a JCB. Forest Marble Formations strata were encountered where the Cornbrash could be penetrated, across the west of the site, and consisted of approximately 2-3m of stiff clay over interbedded limestone and clays.

2.1.3 Groundwater was not encountered in any of the exploratory holes during the fieldwork down to 5.00m depth below the existing ground level. Monitoring standpipes revealed standing groundwater levels within the natural deposits of between 4.31m and 9.53m below the existing ground level (or between 80.03mAOD and 88.31mAOD).

2.1.4 Conventional spread footing will be possible across the whole site; breaking equipment may be required to rip through the limestone to the west of the site. Soakaway testing indicated poor drainage potential on the clay to the west and good drainage on the limestone to the east. Overall, no considerable problems are foreseen with regard to ground conditions for the proposed development. The only possible problem is excavating limestone rock near surface across the eastern half of the site.

3 GROUND INVESTIGATION REPORT

3.1 INTRODUCTION

3.1.1 A ground investigation has been undertaken for land to the east of Woodstock, Oxfordshire, with an approximate postcode of 0X20 1QF. A Site Location Plan is provided in Appendix A. The Ordnance Survey National Grid reference for the site is 445780, 216300.

3.1.2 This report describes the work carried out by Listers Geotechnical Consultants, the ground conditions encountered and discusses their implications with regard to the proposed development.

3.1.3 This report supplements a Phase I Geo-environmental Desk Study that has been produced and issued as a second draft to date, reference number 14.08.005 (rev. 2), dated 9th October 2014.

3.1.4 Instructions to undertake the investigation were received from Pye Homes Ltd and The Vanbrugh Unit Trust, in their letter referenced GF/SJP dated 1st August 2014.

3.2 SCOPE OF THE INVESTIGATION

3.2.1 The scope of the investigation was to provide an assessment of the geotechnical engineering properties of the ground and the extent of any soil contamination on the site. A contaminated land risk assessment was undertaken based on the Contaminated Land Exposure Assessment (CLEA) and Environment Agency RTM guidelines. The investigation also includes a preliminary assessment of the feasibility of adopting a soakaway drainage solution at the site, as well as providing parameters to aid pavement design, in addition to California Bearing Ratio (CBR) tests to aid with road design.

3.3 PROPOSALS

3.3.1 It is proposed to redevelop the site to accommodate a mixed development including 1,500 residential dwellings, a relocated football stadium, an area for retail uses, a care village, a possible link and ride area, locally led employment areas, a primary school and a village centre. A plan showing the proposed development is included in the Appendices.

3.4 SITE INFORMATION AND WALKOVER SURVEY

3.4.1 A walkover survey of the site and its immediate surrounds was undertaken on the 11th August 2014. This description below is based on that walkover survey undertaken on that day.

3.4.2 The site lies in a rural area, and is currently occupied by agricultural fields. The site consists of an approximately rectangular parcel of land, trending southeast-northwest, with approximate dimensions of 850 metres by 750metres, the site extends to approximately 65 hectares.

3.4.3 The site is generally flat lying with a slight ridge sloping down a few metres towards the south of the site, between the ridge and the A44. The site is bordered to the north by Shipton Road leading to more agricultural land; to the northwest by a playing field leading to Marlborough School; to the west by residential dwellings adjoining "Flemings Road"; to the south by Oxford Road (A44) with a single dwelling, "Littlecote", in the centre of the southern boundary, adjoining the road; and to the east by Upper Campsfield Road (A4098) with a row of bungalows and a cattery towards the southeast of the site. Further afield, the town of Woodstock is located to the immediate west of the site area; London Oxford Airport is located to the southeast of the site; and Blenheim Palace and Park are located to the southwest of the site area.

3.4.4 On the site area itself, there were three large fields separated by hedge lines. The largest was located across the central and eastern area of the site and was approximately 700m by 700m square. It had just been harvested and stubble and chaff was still across the ground surface. A wooded border, approximately 10 metres wide was located along the north and eastern boundaries and in the northeast corner was a small triangular wooded area that was slightly topographically depressed. The small wooded area was once a quarry. To the southeast of this field were a row of residential bungalows and a cattery; and in the southwest corner was a residential property called Littlecote. Neither properties form part of the site.

3.4.5 The smallest field is located in the southwest corner of the site and measures approximately 250m by 200m. Again it is flat lying and had stubble and chaff across its surface. Littlecote was located in its southeast corner.

3.4.6 The third field was located towards the northwest and measured approximately 400 metres by 250 metres. Again, the field was generally flat lying and covered with chaff and stubble. Towards the northeast of this field was a stone built house and grounds (Pest House), with a small enclosure for goats and a driveway leading down from Shipton Road.

3.4.7 Across all of the fields, limestone fragments, or "brash", could be seen, betraying the near surface geology under the site. There was no evidence of potentially contaminative point sources across the whole site.

3.5 GEOLOGY

3.5.1 Published Geology

3.5.1.1 Reference to published geological information on the area (BGS Map 1:50,000 - Sheet 236) indicates that the site is underlain by Middle Jurassic age strata comprising Cornbrash Formation to the centre, north and east of the site and Forest Marble Formation towards the southwest of the site, with a small normal fault, downthrown to the north, to the immediate west of the site.

3.5.1.2 Cornbrash Formation strata are described as 'medium- to fine-grained, predominantly bioclastic limestones. Generally bluish grey when fresh, but weathers to olive or yellowish brown. Thin argillaceous partings or interbeds of calcareous mudstone may occur'

3.5.1.3 The Forest Marble strata are described as 'greenish grey, silicate-mudstone, with lenticular typically cross-bedded limestone units that form banks and channel-fills, especially in lower part. A variety of limestone types occur, of which grey, weathering brown and flaggy, variably sandy medium to coarsely bioclastic grainstone predominates.'

3.5.2 Historic Boreholes

3.5.2.1 The records of four exploratory holes, put down on or near the site in July 1990 as part of a possible Woodstock By-Pass scheme, were obtained from the British Geological Survey. These indicate that the site is underlain by topsoil to between 0.25m and 0.60m thick followed by a sequence of interbedded stiff buff and grey-green locally sandy clays and weak to strong oolitic fractured limestone, with individual beds between 0.50m and 3.00m thick on average, and was encountered down to a maximum depth of 9.50m bgl (the base of the hole).

3.5.2.2 Groundwater was struck in one borehole at 5.22m bgl and rose to 3.53m bgl

3.6 DESK STUDY INFORMATION

3.6.1 Reference should be made to the Phase I Desk Study Report, ref 14.08.005 issued 9th Oct 2014, by Listers Geotechnical Consultants for all the historical and environmental desk study

information. However, below is a copy of the Conceptual Site Model and Environmental Risk Summary from that report.

4 CONCEPTUAL MODEL

4.1 GENERAL

4.1.1 A preliminary risk assessment has been carried out using the source-pathway-receptor principle to create a conceptual model for the site. Potential sources of contamination have been assessed using the Contaminated Land Exposure Assessment (CLEA) Guidelines, and the fact that a pathway must exist between a potential source and an identified receptor for there to be a risk, has been taken into account.

4.2 POTENTIAL POLLUTION SOURCES

4.2.1 The results of the desk study and walkover indicate that the following potential sources of ground contamination are present at or in close proximity to the site:

- Made Ground may be present at the site associated with the isolation hospital in the north of the site at the turn of the 20th Century; the area of worked out ground in the northeast corner and the structure in the centre of the large field. However, this is considered unlikely.
- It is possible that migrating ground gases may be coming from the historic worked out ground and landfill to the north and southeast of the site, and the old worked out quarry to the northeast of the site. However, this is considered unlikely.

4.3 IDENTIFIED RECEPTORS

4.3.1 The following receptors with regard to human health have been identified at the site:

- End users of the site (residents or workers)
- Surrounding residents
- Construction workers for the new development
- The following receptors with regard to the environment and controlled waters have been identified at the site:
- Controlled Waters - the Secondary A aquifer beneath the site (Cornbrash Formation)
- Local Ecosystem

4.4 POTENTIAL POLLUTANT PATHWAYS

4.4.1 It is considered that potential pathways exist between these potential sources and the above identified receptors. For human health these include:

- Direct soil ingestion in exposed soft landscaped areas.
- Inhalation of indoor and outdoor dust.
- Ingestion of soil attached to home grown vegetables.
- Ingestion of contamination uptake in home grown fruit and vegetables.
- Migration of ground gasses through permeable soils and buildings.
- For controlled waters /and the environment these include:
- Migration of contaminants through the unsaturated zone.
- Migration of contaminants through the groundwater.

5 SUMMARY OF ENVIRONMENTAL RISK

5.1.1 Desk Study research has identified three potential contamination sources on the site. However, it is considered that the likelihood of these sources being significant is **VERY LOW**. Therefore, on the basis of the information obtained and reviewed within this report, the potential risk for land ownership and potential liability issues associated with the site are considered to be **VERY LOW**. As such, given the possible isolated sources, the size of the project and the need to carry out ground investigation to establish soil conditions across the whole site; it is recommended that a general sweep of contamination tests are undertaken across the site and the three potential sources areas be more specifically targeted. That is what has been undertaken during this investigation and is reported later in the

6 EXPLORATION AND TESTING

6.1 GENERAL

6.1.1 A total of 65 No. exploratory holes were formed at the site, inclusive of 40No. machine excavated trial pits, 19 No. continuous tube sample boreholes and dynamic probe holes and 6No. rotary boreholes between the 8th and 17th September 2014. The logs are provided in Appendix B.

6.2 SAMPLING STRATEGY

6.2.1 The positions of the exploratory holes were selected by Listers Geotechnical Consultants to provide a wide coverage of information on the site area. As the desk study and walkover survey had identified a small number of potential pollution sources at the site several of the exploratory holes were targeted on these sources. These included:

Target	Exploratory Hole
Old quarry to northeast	WS R and S, BH 105
Old quarry to southeast (off-site)	BH 106
Old isolation hospital ground	BH 103, TPs 16, 18, 19 & 20
Old radio mast structure	TPs 26,27 &31 WS N
Old infilled railway cutting (landfill) to the north (off-site)	BH 101

6.2.2 Where off-site targets have been identified these have been placed within the site boundaries adjacent to the off-site targets for the installation of ground gas and water monitoring standpipes. These are to assess the possibility of ground gas or contaminated groundwater entering the site, under the ground.

6.2.3 The other exploratory holes were positioned to create a semi regular pattern across the site (avoiding excavation in the area of the Scheduled Monument), in order to provide a spread of information.

6.2.4 The position of all exploratory holes undertaken at the site as part of this investigation can be seen on the Exploratory Hole Location Plan in Appendix A . The available results of the laboratory testing are provided in Appendix C.

6.3 METHODOLOGY

6.3.1 The trial pits, TP 1 to TP 40 were excavated with a JCB type backhoe excavator to a maximum depth of 4.00m below ground level. Small-disturbed samples were taken at regular intervals down to the base of the holes for subsequent laboratory testing and inspection. In-situ measurements of shear strength were taken using a hand shear vane/ pocket penetrometer, where applicable. On completion, all trial pits were carefully backfilled with arisings in thin layers, ensuring that excavated material was replaced in the same order as it had been removed. Soakaway testing was undertaken in trial pits TPs 3, 7, 10, 14, 21, 22, 29, 30, 31, 38 and 39 in accord with BRE Digest 365 'Soakaway Design'. In addition, in-situ measurement of California Bearing Ratio (CBR) and dynamic sub-grade modulus (E_{vd}) were undertaken at the sub-grade level (0.50m bgl) in TPs 4, 6, 11, 12, 15, 23, 24, 27, 33, 35, 37 and 40.

6.3.2 The continuous tube sample boreholes, WS A to WS S, were put down using an Archway Competitor Dart rig to a maximum depth of 5.00m. Boreholes were advanced using a plastic lined steel tube sampling system, driven into the ground by a top drive percussive hammer. A near continuous 87mm – 67mm diameter core sample was recovered of the sampled materials for future examination and sub-sampling. Following the sampling, Super-Heavy dynamic probing, SHDP A to SHDP S, was carried out adjacent to the position of all boreholes to give an indication of the relative density of the soils encountered.

6.3.3 Boreholes BH 101 to 106 were put down to a maximum depth of 15.00m below ground level, between the 9th and 16th September 2014 using a Comacchio Geo 205 drilling rig. The strata were penetrated using a hydraulic hammer continuous tube system until this was no longer possible Upon reaching hard strata the boreholes were extended by using rotary techniques with a mist flush to a final depth of 15.00m bgl. These core samples were transported back to the Listers Geotechnics laboratory and logged by a qualified engineering geologist.

6.3.4 On completion of the boring, all boreholes were utilised for the installation of a 50mm diameter slotted uPVC standpipe from the base of the borehole up to within 2.00m below existing ground level. From 2.00m depth up to ground level a plain pipe was added. The slotted section of the standpipe was surrounded with pea gravel, while expansive bentonite clay was added around the

plain pipe and below the slotted section to seal the borehole. The standpipe was finished with a stopcock cover, which was then concreted flush with ground level.

6.3.5 All exploratory holes were surveyed in on site and their individual NGR co-ordinates and ground levels are included on each log.

6.3.6 Engineering and geoenvironmental conclusions given in this report are based on data obtained from these sources but it should be noted that variations, which affect these conclusions, may occur between and beyond the test locations. Also water levels may vary with time.

6.4 RESULTS

6.4.1 The site and laboratory test work revealed that the general succession of strata can be represented by Topsoil overlying Cornbrash and Forest Marble strata. It may be summarised as follows:

6.4.1.1 Topsoil - encountered at each location from ground level to depths ranging from 0.10m bgl to 0.50m bgl. It consisted of brown sandy topsoil with some roots and platy limestone gravel.

6.4.1.2 Cornbrash Fm. - encountered at 39 of the 40 trial pit locations from beneath the Topsoil and down to depth ranging from 0.50m bgl towards the southwest of the site; to 4.90m bgl towards the east of the site. A boundary line where Cornbrash Fm. strata could not be penetrated by a JCB 3CX is indicated on the Exploratory Hole Location Plan in the Appendices. The Cornbrash Fm. strata consisted of interbedded layers of sub-horizontally bedded platy orange-brown and grey fossiliferous limestones and sandy limestones. Dependent on the state of weathering within these layers they were described as dense orange-brown gravel and cobbles or medium dense orange-brown gravelly sand with localised amount of clay.

6.4.1.3 Full laboratory sieve analyses on the more granular soil horizons revealed these to be sandy gravels.

6.4.1.4 The results of the Super-Heavy dynamic probing indicated that the Cornbrash was impenetrable in many locations. With some probes only reaching 0.90m bgl

6.4.1.5 Forest Marble Fm. - encountered in 19No. of the 40No. trial pits (as the Cornbrash Fm. strata could not be penetrated in the remaining 21No.) from beneath the Cornbrash strata and to the full depth of the investigation in each case, a maximum depth of 15.00m bgl. It consisted, initially of a stiff to very stiff light grey and grey closely fissured silty clay with localised calcareous

nodules, mudstone and limestone lithorelics. With depth the Forest Marble strata became an interbedded sequence of very strong massive grey limestones, strong fractures limestone, very stiff grey clays and weak fractures dark grey mudstones with numerous fossils. Where Forest Marble clay was located close to the ground surface some desiccation was noticed within visual description (e.g. TP 5 and 11).

6.4.1.6 Classification tests on selected samples revealed modified plasticity indices ranging between 8% and 27% with the fines fraction classified as a soil of low volume change potential. See NHBC Building Standards, Chapter 4.2. /See BRE Digest 240. Evidence from TPs towards the west of the study area indicated that near surface desiccation occurred down to a depth of approximately 1.00m below ground level.

6.4.1.7 Shear vane and pocket penetrometer tests undertaken in the field in samples from the trial pits revealed undrained shear strengths ranging from 122kPa to 300kPa.

6.4.1.8 The results of the Super /Heavy dynamic probing indicated that the Forest Marble was generally very stiff, increasing dramatically in density with depth where limestone bands were struck.

6.4.2 California Bearing Ratio (CBR) Tests

6.4.2.1 CBR tests were undertaken in the Cornbrash Fm. soils encountered at the site. Results of the testing ranged between 4% and 45%.

6.4.3 Sulphate and pH Tests

6.4.3.1 Soluble sulphate tests carried out on near surface soil samples recovered from the exploratory holes recorded values ranging from 0.04g/l to 0.31g/l, in conjunction with pH values ranging from 7.3 to 8.1.

6.5 GROUNDWATER

6.5.1 Groundwater was not encountered in any of the exploratory holes during the fieldwork down to 5.00m depth below the existing ground level. Groundwater/ground gas monitoring standpipes were installed in the BHs 101 to 106 with response zones within the natural strata from 2.0m bgl to 15.0m bgl.

6.5.2 Long term monitoring carried out as part of the project has revealed standing groundwater levels within the natural deposits of between 4.31m and 9.53m below the existing ground level (or

between 80.03mAOD and 88.31mAOD). This equates to an hydraulic gradient across the site of 1 in 100 (0.01) in an easterly direction, towards the River Cherwell.

6.6 OBSERVED SOIL CONTAMINATION

6.6.1 There was no visual or olfactory evidence of contamination during the fieldwork, in fact there was no noticeable Made Ground anywhere on the site.

6.7 SOAKAWAY TESTING

6.7.1 Soakaway testing was carried out in both the Forest Marble and Cornbrash Fm. strata encountered at the site, at a depth of between 1.00m and 2.00m depth in TPs 3, 7, 10, 14, 21, 22, 29, 30, 31, 38 and 39 in accord with BRE Digest 365 'Soakaway Design'. The infiltration results ranged between $4.7 * 10^{-5}$ m/s to no infiltration within the Forest Marble strata; and between $4.5 * 10^{-4}$ m/s and $1.8 * 10^{-5}$ m/s in the Cornbrash Fm. strata.

6.7.2 The results of the soakaway test are included in Appendix A.

6.8 GROUND GAS

6.8.1 Ground gas monitoring carried out as a part of this investigation has revealed oxygen levels of between 12.7% and 21.1% by volume, carbon dioxide levels of between 0.1% and 1.6% by volume, and methane levels below detectable limits, and atmospheric pressures ranging from 983 mb to 1020 mb.

6.8.2 Flow rates ranged between 0.0 l/hr (no flow) and 0.4 l/hr. These low flow rates are indicative of the soils encountered which did not include any Made Ground, or have any significant quantities of organic matter or materials which can decay.

6.8.3 The results are provided in Appendix B.

7 GROUND CONTAMINATION ASSESSMENT

7.1 SOIL TESTING

7.1.1 Twenty-seven soil samples and six groundwater samples collected on site during this investigation were tested for a range of contaminants. The suite of testing carried out on the samples was decided upon following consultation of R&D CLR Publications, published as part of the Contaminated Land Exposure Assessment (CLEA), a joint venture between the Department for Environment, Food and Rural Affairs (DEFRA) and the Environment Agency.

7.1.2 The test suite included a range of:

- Metals and inorganic substances
- Speciated Polyaromatic Hydrocarbons (PAH)
- Total Petroleum Hydrocarbons (TPH), with eight band split
- Pesticide screen
- Asbestos screening

7.1.3 The soil samples were tested to obtain 'Total' values within the soil.

7.1.4 The results of the tests from this investigation are included in Appendix C.

7.2 RISK ASSESSMENT GUIDELINES – HUMAN HEALTH

7.2.1 The human health risk assessment has been undertaken using the guidance provided in the Environment Agency's publication CLR11, Model Procedures for the Management of Contaminated Land, published in September 2004. Human health assessment criteria used are based upon the proposed final land use of the site, in this case the guidelines for 'Residential with plant' have been used.

7.2.2 Soil Guideline Values

7.2.2.1 Currently in the UK, no statutory limits for the presence of contaminants in soils or groundwater exist. Therefore, the results of the soil samples tested are compared primarily to the Soil Guideline Values (SGVs) where available published from March 2009 by DEFRA and the EA.

7.2.2.2 The SGVs are baseline ground contamination standards calculated using the CLEA software described below. They are based upon a sandy loam soil type with 6% soil organic matter and give a "*Minimal Risk*" level of protection.

7.2.3 Category 4 Screening Levels (C4SLs)

7.2.3.1 Published in March 2014 by DEFRA, C4SLs were primarily produced to support the revised Statutory Guidance to support Part 2A of the Environmental Protection Act 1990, which was published in April 2012. This Guidance introduced a new four-category system for classifying land under Part 2A for cases of a Significant Possibility of Significant Harm to human health, where Category 1 includes land where the level of risk is clearly unacceptable and Category 4 includes land where the level of risk posed is acceptably low.

7.2.3.2 With regards to using the C4SLs for planning purposes the DEFRA guidance states:

"The Part 2A regime and the planning regime are inter-linked such that the National Planning Policy Framework states that "after development, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990" and that "Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner." The Part 2A Statutory Guidance and accompanying Impact Assessment were developed on the basis that Category 4 Screening Levels could be used under the planning regime, as they would be in Part 2A investigations directly. The estimated benefits that were expected to accrue from the changes to the Part 2A Statutory Guidance and specifically from the use of the new Category 4 Screening Levels were based on this assumption."

7.2.3.2 Again, they are based upon a sandy loam soil type with 6% soil organic matter but this time give a "*Low Risk*" level of protection.

7.2.3.3 Where it is considered appropriate C4SLs have been used as screening levels within this report.

7.2.4 Generic Assessment Criteria (GAC)

7.2.4.1 As well as the SGVs and C4SLs, the set of GACs produced by Land Quality Management (LQM) and the Chartered Institute of Environmental Health (CIEH) in 2009 using the CLEA software, are used as a screening tool, as are the GACs produced by CL:AIRE (Contaminated Land: Applications In Real Environments) in conjunction with AGS and EIC.

7.3 RISK ASSESSMENT GUIDELINES – GROUNDWATER

7.3.1. The procedures set out in Environment Agency's Remedial Targets Methodology *Hydrogeological risk assessment for contaminated land* (2006), have been followed.

7.3.2 The groundwater test results are compared to the UK Drinking Water Standards (UKDWS) set out in The Water Supply (Water Quality) Regulations 2000. Where the environmental setting is sensitive, results are also compared to the Environmental Quality Standards (EQS) as set out in the EC Dangerous Substances Directive (76/464/EEC).

8 RESULTS OF TOTAL SOIL TESTS

8.1 Of all the contaminants tested none recorded values higher than their relevant environmental standard value for human health for a residential setting.

9 RESULTS OF GROUNDWATER TESTS

9.1 Of the 6 samples tested none recorded contaminant values in excess of their respective UK Drinking Water Standard (UKDWS).

10 ENVIRONMENTAL RISK ASSESSMENT

10.1 The following qualitative risk assessment has been carried out using the source-pathway-receptor principle. As such, potential sources of contamination have been assessed using the CLEA and RTM Guidelines. The fact that a pathway must exist between a potential source and potential receptor for there to be a risk, has been taken into account. The potential environmental receptors evaluated for their individual risk are:

- End users of the site (residents, workers).
- Surrounding residents.
- Construction workers.
- Controlled Waters (Secondary A Aquifer and received stream - The River Cherwell)

10.2 GENERAL

10.2.1 Reference to the Conceptual Site Model in report 14.08.005 indicated that three potential point sources of contamination were identified on site. These were the old worked out quarry to the northeast, the old isolation hospital to the north and the structure in the centre of the large field.

All these areas were investigated and no potential contaminants were encountered at any of the locations. In addition to this a wide spread of chemical tests were undertaken across the site at random locations. None of these encountered any chemicals at elevated levels. As such, it is considered that there is no elevated risk to the above recognised environmental receptors from the proposed development at this site.

10.2.2 Therefore, there is considered to be no need for remedial measures or further investigative works prior to the proposed development.

10.2.3 Comments on gas protection measures are included below in the relevant section.

11 GEOTECHNICAL ENGINEERING CONCLUSIONS

11.1 GENERAL

11.1.1 Topsoil was encountered at each location from ground level to depths ranging from 0.10m bgl to 0.50m bgl. It consisted of brown sandy topsoil with some roots and platy limestone gravel.

11.1.2 Cornbrash Formations strata were encountered at 39 of the 40 trial pit locations from beneath the Topsoil and down to depth ranging from 0.50m bgl towards the southwest of the site; to 4.90m bgl towards the east of the site. A boundary line where Cornbrash Fm. strata could not be penetrated by a JCB 3CX is indicated on the Exploratory Hole Location Plan in the Appendices. The Cornbrash Formation strata consisted of interbedded layers of sub-horizontally bedded platy orange-brown and grey fossiliferous limestones and sandy limestones. Dependent on the state of weathering within these layers they were described as dense orange-brown gravel and cobbles or medium dense orange-brown gravelly sand with localised amount of clayey or strong closely fractured limestones.

11.1.3 Forest Marble Formations strata were encountered in 19No. of the 40No. trial pits (as the Cornbrash Fm. strata could not be penetrated in the remaining 21No.) from beneath the Cornbrash strata and to the full depth of the investigation in each case, a maximum depth of 15.00m bgl. It consisted, initially of a stiff to very stiff light grey and grey closely fissured silty clay with localised calcareous nodules, mudstone and limestone lithorelics. With depth the Forest Marble strata became an interbedded sequence of very strong massive grey limestones, strong fractures limestone, very stiff grey clays and weak fractures dark grey mudstones with numerous fossils. Where Forest Marble clay was located close to the ground surface some seasonal desiccation was noticed within visual description and from laboratory testing down to a maximum

depth of 1.00m bgl (e.g. TP 5 and 11). The Forest Marble strata would be classified as low volume change potential.

11.1.4 Groundwater was not encountered in any of the exploratory holes during the fieldwork down to 5.00m depth below the existing ground level. Groundwater/ground gas monitoring standpipes were installed in the BHs 101 to 106 with response zones within the natural strata from 2.0m bgl to 15.0m bgl. However, long term monitoring carried out as part of the project has revealed standing groundwater levels within the natural deposits of between 4.31m and 9.53m below the existing ground level (or between 80.03mAOD and 88.31mAOD). This equates to an hydraulic gradient across the site of 1 in 100 (0.01) in an easterly direction, towards the River Cherwell.

11.2 SITE EXCAVATION

11.2.1 Conventional hydraulic plant should be satisfactory for excavating foundation and service trenches within the Forest Marble across the western half of the site; specialist rock ripping/breaking plant will be required to assist in the removal of Cornbrash strata across the eastern half of the site. Reference should be made to the Exploratory Hole Location Plan in the Appendices that shows the approximate areas where the rock quality Cornbrash strata that could not be penetrated by a JCB 3CX.

11.2.2 In line with recent HSE guidelines, all excavations requiring personnel access should be adequately supported to avoid the risk of collapse. Excavations within the Forest Marble or Cornbrash are likely to remain stable in the short and medium term.

11.2.3 Groundwater is not expected to be encountered down to a depth of 4.0m bgl.

11.2.4 Consideration should be given to the effects of trees and shrubs on service runs that cross the site. Soil movements brought on by the influence of vegetation can severely disrupt the drain runs and mains services, and measures should be incorporated into the excavations to allow for future ground movements.

11.3 FOUNDATION SOLUTIONS

11.3.1 Shallow Foundations

11.3.2 The Forest Marble and Cornbrash strata are considered to be a suitable bearing stratum for conventional shallow foundations at not less than 1.00m below existing ground level or 0.20m into the top of the formation, whichever is the deeper.

11.3.3 The results of the laboratory testing indicated seasonal desiccation within the Forest Marble strata down to approximately 1.00m towards the west of the site. We recommend an Arboriculturist is appointed to determine tree species at the site, where foundations are to be constructed within the vicinity of trees or shrubs on this site then they will require deepening in accord with guidelines given in NHBC Building Standards Chapter 4.2. This should be done at the detailed design phase of the proposed development and will not be required under the detailed design of conventional spread foundations is required.

11.3.4 Where this requires that foundations are constructed deeper than 2.50m further ground investigation may be required in order to establish the full depth of any localized soil desiccation beneath the footprint of the proposed structure.

11.3.5 Care should be taken to ensure that any new planting in the development will not affect the new foundations.

11.3.6 The Forest Marble soils should be considered as being of low volume change potential, and the Cornbrash would be considered non-shrinkable. However, it must be remembered that the Forest Marble clays underlie the Cornbrash across the site, so even if Cornbrash limestone is encountered at founding depths footing may require deepening in accordance with NHBC Standards to avoid shrinking/swelling.

11.3.7 At a depth of 1.00m bgl a safe bearing capacity of 175kPa may be adopted for all foundations across the whole site not exceeding 1.0m in width. This allows for a factor of safety of three against shear failure and for settlements (if any) generally not to exceed 25mm taking place over a number of years.

11.3.8 In order to minimise differential settlement of spread foundations spanning rock (Cornbrash) and clay (Forest Marble) strata it is recommended that reinforcement be placed in the foundations approximately 1m each side of any area where such a span is inevitable.

11.4 GROUND FLOOR SLABS

11.4.1 Across the eastern section of the site, where Cornbrash strata is located, provided all the Topsoil is stripped off, ground bearing floor slabs could be constructed placed on a layer of well compacted granular fill. However where it is required to deepen the main foundations below 1.50m depth, due to the presence of vegetation or where seasonal desiccation is occurring then ground floor slabs will require suspending in accord with NHBC guidelines. A void should be left below the floor slab to accommodate future soil movements. This may be achieved by use of a proprietary compressible material such as Clay board or Cellcore.

11.4.2 It should be noted that across the western section of the site (where Forest Marble strata was encountered) in accord with NHBC guidelines, a suspended floor slab will be required in soils with a volume change potential, even in the absence of trees and shrubs, where the soil is seasonally desiccated, as it was on this site down to a depth of 1.00m bgl. Under those circumstances the adoption of a suspended slab is only likely to be avoided if construction of the floor slab takes place during the wetter times of the year. A void should be left below the floor slab to accommodate future soil movements. This may be achieved by use of a proprietary compressible material such as Clay board or Cellcore.

11.5 GAS PROTECTION

11.5.1 The risk of ground gases impacting the site was assessed by reference to the paper "A pragmatic approach to ground gas risk assessment for the 21st Century" Card and Wilson, 2011. This is a follow up paper to the CIRIA Report 665 and is compatible with that document.

11.5.2 Three potential sources of ground gas were established from the desk study information; the infilled railway cutting to the north, and the two infilled quarries to the north-east and south-east of the site. As such, standpipe were located in those areas, with three other boreholes located across the site for coverage. These standpipes were monitored six times over a two month period

11.5.3 The results of the gas monitoring have revealed that normally low levels of carbon dioxide gas up to 1.6%, methane up to 0% and oxygen gas up to 21.1% are being produced in the ground. Flows rates between 0l/hr and 0.4l/hr were recorded.

11.5.4 Using the maximum carbon dioxide reading of 1.6% with the highest recorded flow rate of 0.4l/hr, the maximum gas screening value is 0.006l/hr. There were no carbon dioxide levels above 5% and no methane levels above 1%. This classifies the site as Characteristic Situation 1.

11.5.5 Therefore, for residential or commercial buildings on this site there is considered to be no requirement for gas protection measures against methane or carbon dioxide gas.

11.5.6 The BGS advises that no radon gas protection measures are necessary.

11.6 CLASSIFICATION OF WASTE MATERIAL

11.6.1 The excavations on site from foundation and services trenches will produce a considerable amount of surplus soil. As a part of the proposed construction phase the developer will seek to minimise the amount of soil being taken off-site and therefore the amount of waste. However, under current waste management legislation if this soil is surplus to requirements it will be classified as waste and needs disposing of at a licensed facility. However, some of the soil may be able to be re-used on-site as described in the RE-USE OF MATERIAL ON SITE section below.

11.6.2 If it is decided that the soil should be taken off-site as waste and disposed of, the implementation of the Landfill Directive means that the waste soil requires classification prior to leaving site.

11.6.3 European Waste Catalogue Determination

11.6.3.1 Using the 'Total' soil contamination test results from this investigation in conjunction with the HazWasteOnline spreadsheets, the majority of the soil has been classified as **non-hazardous** waste.

11.6.3.2 Two samples CT 1 and CT 37 were classified as potentially hazardous due to minor hydrocarbons content. However, reference to the document WM2 published by the Environment Agency with regard to hazardous wastes indicates that hydrocarbon concentration and concentration was not high enough for flammability to be relevant. Therefore these samples were considered non-hazardous.

11.6.3.3 A summary of the results of the assessment is provided in Appendix C. The full details of the assessment are available upon request.

11.6.3.4 With regard to the European Waste Catalogue Code 17 05 04 'Stone and soils from uncontaminated sites' should be classified as **inert**. As such all the soils from this site would fall into that category.

11.6.4 Waste Classification

11.6.4.1 From the results of the HazWasteOnline spreadsheets and European Waste Catalogue Code 17 05 04, currently, the waste soil on this site is classified as **inert** and should be disposed off to an **INERT** landfill site..

11.6.4.2 Analytical results relevant to the materials being disposed of should be provided to the landfill operators or waste management contractors to confirm whether it meets their license agreements and to confirm tipping costs.

11.7 RE-USE OF MATERIAL ON SITE

11.7.1 Currently, if surplus soil is 'fit for re-use' on the site and has not been treated, its re-use is allowed within the planning law. If it needs treating prior to re-use, exemptions can be sought from the Environment Agency to allow this activity.

11.7.2 A recent voluntary code of practice published by CL:AIRE, in conjunction with the EA, (the Definition of Waste: Development Industry Code of Practice, Version 3) endorses the re-use of surplus soil on and off the site of origin without the need for exemptions from the EA, dependent on whether it is "fit for purpose". It also supports the use of "Hub and Cluster" sites (to enable surplus soil to be used on agreed sites in the local vicinity, dependent on the soil being 'fit for purpose').

11.7.3 Based upon the human health and groundwater risk assessments, the soils on this site are considered to be suitable to be re-used on site for landscaping purposes, dependent on the agreement of the Local Authority.

11.8 SUBSURFACE CONCRETE

11.8.1 With respect to BRE Special Digest 1 'Concrete in Aggressive Ground' (2005), chemical tests on selected soil samples have recorded soluble sulphate concentrations ranging from 0.04g/l to 0.31g/l, in conjunction with pH values ranging from 7.3 to 8.1. This would correspond to a Design Sulphate Class of **DS-1**.

11.8.2 In terms of BRE Special Digest 1, the former/current land use on the site means that it should be considered as natural ground. The groundwater beneath the site should be considered as static. The results correspond to Aggressive Chemical Environment for Concrete (ACEC) class **AC-1s**.

11.9 ACCESS ROADS AND PARKING

11.9.1 The structural design of a road or hard standing is based on the strength of the subgrade, which is assessed on the California Bearing Ratio (CBR) scale. With reference to Transport and Road Research Laboratory, Report LR1132, and in-situ data it is recommended that for formation prepared in the Cornbrash, a subgrade CBR value of 20% is adopted for preliminary design purposes, and for formation prepared in the Forest Marble, a subgrade CBR value of 5% is adopted for preliminary design purposes. These results are based on equilibrium soil conditions, a thin pavement construction, low water table and average construction conditions. The site conditions should be reassessed at the time of construction and the CBR/pavement design updated accordingly if considered necessary.

11.9.2 Any areas of soft or deleterious material should be excavated and replaced with a properly compacted granular fill.

11.9.3 The Cornbrash in the east of the site should be considered to be frost susceptible, requiring a minimum pavement construction thickness of 450mm.

11.10 SOAKAWAY TESTING

11.10.1 Soakaway testing was carried out in both the Forest Marble and Cornbrash Fm. strata encountered at the site, at a depth of between 1.00m and 2.00m depth in TPs 3, 7, 10, 14, 21, 22, 29, 30, 31, 38 and 39 in accord with BRE Digest 365 'Soakaway Design'. The infiltration results ranged between $4.7 * 10^{-5}$ m/s (although this may be associated with Cornbrash Deposits at very near surface level) to No Infiltration within the Forest Marble strata; and between $4.5 * 10^{-4}$ m/s and $1.8 * 10^{-5}$ m/s in the Cornbrash Fm. strata.

11.10.2 A plan showing the division of Forest Marble strata across the west of the site and the Cornbrash strata across the east of the site is included in the Appendices. In summary infiltration was low to none across the Forest Marble to the west, and medium across the Cornbrash strata across the east of the site.

11.11 UNDERGROUND SERVICES

11.11.1 It should be noted that the utility companies often have their own local guidelines and standards on levels of shallow soil contamination in the ground that may or may not be acceptable for the

installation of below ground services. These standards may be different to those specified for assessing risks to human health and groundwater.

11.11.2 The local requirements should be obtained from the particular service supply company as soon as possible to avoid unexpected delays or additional development costs, although given the chemical results encountered at this site it is considered highly unlikely that special protective pipes will be required at this site.

11.11.3 Guidance can be sought from the UK Water Industry Research (UKWIR), 'Guidance for the selection of water supply pipes to be used in brownfield sites', reference 10/WM/03/21 and 'Pipe materials selection and specification for use in contaminated land', referenced 04/WM/03/0. These documents propose that the assessment of the hazard to potable water supply pipes should be based on the following pathways: contact with migrating groundwater, permeation of vapour, and direct contact with soil.

12 CONCLUSIONS OF REPORT

12.1 From an environmental point of view, there was no risk encountered on this site for all possible Human Health or Controlled Waters receptors, therefore, no further investigation or remedial measures were recommended.

12.2 From a geotechnical point of view, the site is underlain by clay to the west and limestone to the east. A plan showing the underlying strata is included in the Appendices. Conventional spread footing will be possible across the whole site, breaking equipment to rip through the limestone to the west of the site may be required, soakaway testing indicated poor drainage potential on the clay to the west and good drainage on the limestone to the east. Overall, no considerable problems are foreseen with regard to ground conditions for the proposed development. The only possible problem is excavating limestone rock near surface across the eastern half of the site.

13 REFERENCES

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National House Building Council (NHBC) Standards, Chapter 4.2 Building Near Trees. 2011.

National House Building Council (NHBC) Standards, Chapter 4.1 Land Quality – Managing Ground Conditions. 2011.

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Transport and Road Research Laboratory, Report 1132, The Structural Design of Bituminous Roads. 1984.

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Concrete in Aggressive Ground, BRE Special Digest 1, 2005.

Code of practice for the characterization and remediation from ground gas in affected developments, BS8485:2007.

Assessing Risks Posed by Hazardous Ground Gases to Buildings, CIRIA C665, 2007.

Environment Agency, Technical Guidance WM2, Third Edition, 'Hazardous waste, interpretation of the definition and classification of hazardous waste', May 2013.

APPENDIX A
PLANS AND PLOTS

Listers Geotechnical Consultants

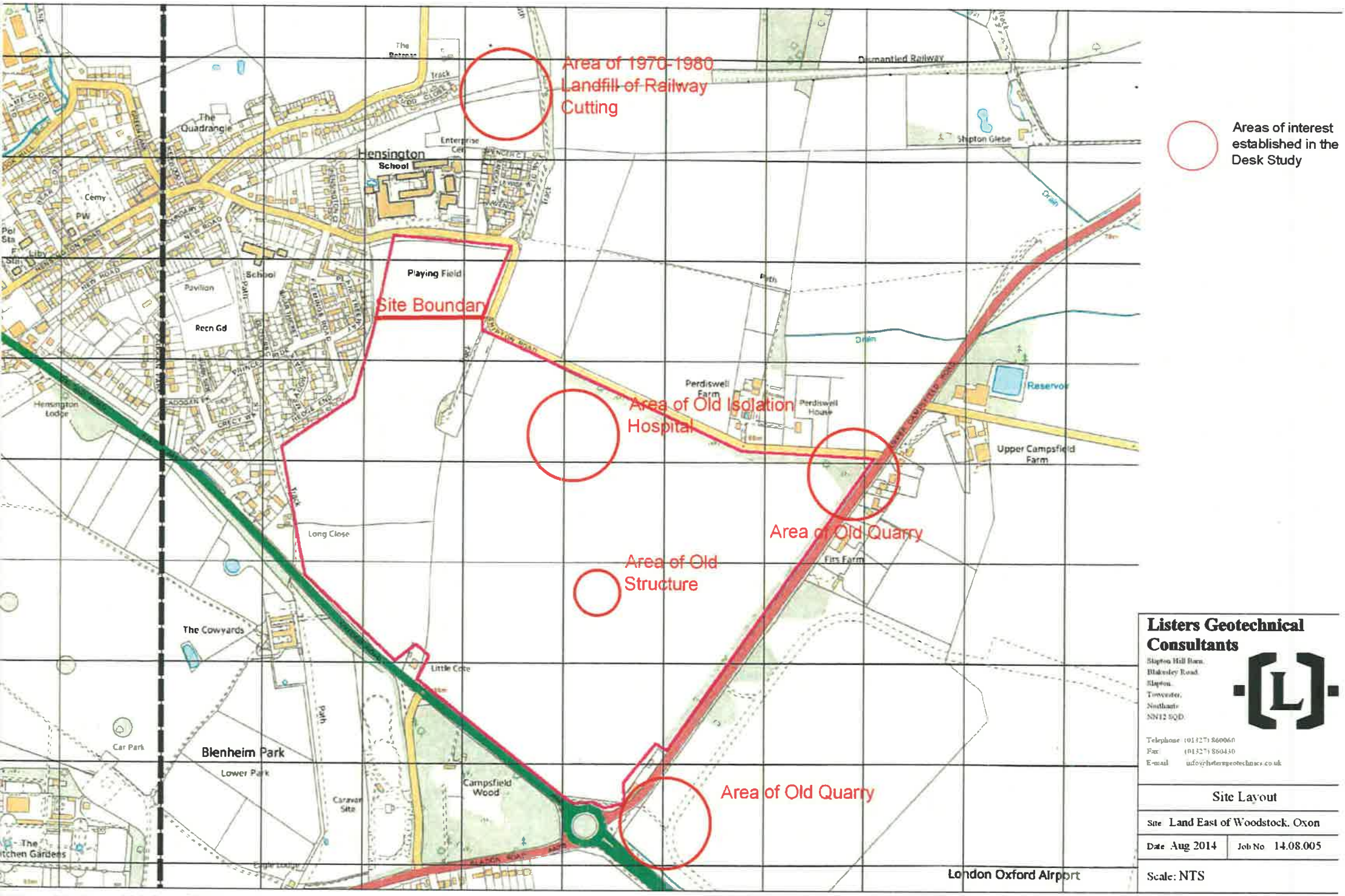
Slipton Hall Farm
Blakesley Road
Slipton
Towcester
Northants
NN12 8QD

Telephone 01327 860068
Fax 01327 860430
E-mail info@listers-geotechnics.co.uk

Site Location Plan

Site Land East of Woodstock, Oxon.

Date Aug 2014 | Job No 14.08.005



Listers Geotechnical Consultants
Shipton Hill Barn,
Blakesley Road,
Shipton,
Towcester,
Northants
NN12 8QD.
Telephone (01327) 860060
Fax (01327) 860430
E-mail info@listersgeotechnics.co.uk

Site Layout

Site Land East of Woodstock, Oxon

Date Aug 2014 | Job No 14.08.005

Scale: NTS

KEY

Rotary Borehole. Sept 2014

Continuous Tube Sample. Sept 2014

Trial Pit. Sept 2014

Area where Cornbrash could not be penetrated by JCB 3CX.

Area where Cornbrash could be penetrated by JCB 3CX, exposing stiff clay of Forest Marble Fm.

Listers Geotechnical Consultants

Slapton Hill Barn,
Blakesley Road,
Slapton,
Towcester,
Northants
NN12 8QD

Telephone: (01327) 860060
Fax: (01327) 860430
E-mail: info@listersgeotechnics.co.uk

Exploratory Hole Location

Site: Land East of Woodstock

Scale: 1:1750 Job No.: 14.08.005a

Legend

- Site Boundary
- Phase 1 Area
- Residential
- Care Village
- Education (Primary School)
- Employment (and Park and Ride)
- Football Club / Sports Facility
- Local Centre
- Registered Common Land
- Proposed Green Network
- Scheduled Monument Designated Area
- Scheduled Monument Open Space
- Hedgerow
- Highways
- Primary (Vehicular) Access
- Secondary (Vehicular) Access
- Pedestrian Access

Rev	Date	Revisions	Initials	checked
E	27/08/14	Large retail revision removed	CiB	JA
D	22/08/14	Amended Land Uses	RB	CB
C	12/08/14	Rail Link Updated Access Points Updated	CiB	JA
B	30/07/14	Amended Land Uses	CC	CiB
A	15/07/14	Amended Land Uses	CiB	JA
-	07/14	First Issue	RB	CiB

Woodstock East

Framework

The Malthouse
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Tel (01235) 523139
Fax (01235) 521952
e-mail: enquiries@westwaddy-adp.co.uk

ARCHITECTS AND TOWN PLANNERS
westwaddy ADP

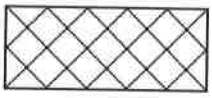
Date	July 2014
Scale	1:2,500 @ A1
Drawn	RB
checked	CiB
Job	273
Dwg No.	SK001
Rev.	E

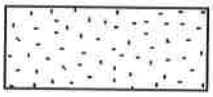
Doc Ref: GF

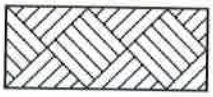
APPENDIX B
FIELDWORK AND TESTING

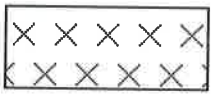
1.0 SOIL/ROCK SYMBOLS

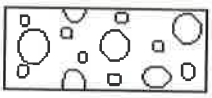
1.1 Soils

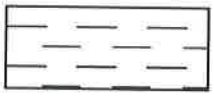

Made Ground

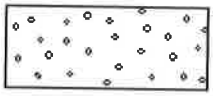

Sand

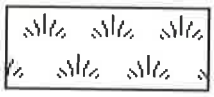

Topsoil


Silt

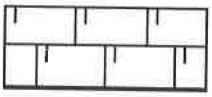

Boulders and Cobbles


Clay

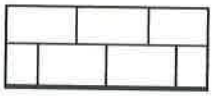

Gravel

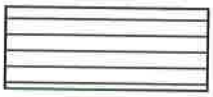

Peat

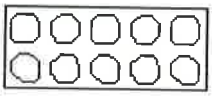
1.2 Rocks, Sedimentary

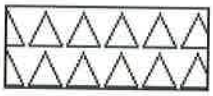

Chalk


Siltstone

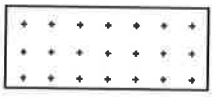

Limestone


Mudstone


Conglomerate


Breccia


Coal


Sandstone

SOIL/ROCK SYMBOLS

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP1

Date of Excavation: 10/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Brown sandy TOPSOIL with limestone gravel.		0.00	(0.50)	0.10	D		
			0.50	0.50	D		
CORNBRASH Dense dark orange sandy clayey limestone GRAVEL			(0.50)				
		1.00	1.00	1.00	D		
CORNBRASH Strong orange-brown and buff horizontally bedded, extremely closely fractured, platey LIMESTONE with sandy clay in fractures.			(0.20) 1.20				
FOREST MARBLE Very stiff light grey fissured silty CLAY.				1.50	D	+140	
		2.00	(1.80)				
...with many lithorelicts from 2.30m				2.50	D		
		3.00	3.00				
Trial Pit terminated at 3.00 m							
		4.00					

Remarks

1. Method of Excavation: JCB
2. Backfill with Site Arisings
3. Groundwater: Dry
4. Stability: Stable
5. Logged by MB to +A2

Ground Level: 93.640m AOD
NGR: 445444: 216655

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP2

Date of Excavation: 10/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Brown sandy silty TOPSOIL with limestone gravel.		0.00	(0.40)	0.10	D		
CORNBRASH Strong horizontally bedded orange-brown extremely closely fractured platy LIMESTONE with sandy clay on fractures.			0.40	0.50	D		
		1.00	(1.00)	1.00	D		
FOREST MARBLE Stiff light grey fissured silty CLAY with occasional nodules.			1.40	1.50	D	122	
		2.00		2.00	D		
...becoming very stiff, horizontally bedded with mudstone lithorelicts from 2.20m.			(1.60)				
Trial Pit terminated at 3.00 m		3.00	3.00	3.00	D		
		4.00					

Remarks

1. Method of Excavation: JCB
2. Backfilled with Site Arisings
3. Groundwater: Dry
4. Stability: Stable
5. Logged by MB to +A2

Ground Level: 92.720m AOD
NGR: 445584: 216655

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP3

Date of Excavation: 09/09/2014

Description of Strata	Strata Change			Samples		Hand Vane (kPa) (Cu)	Water Level -m
	Legend	Depth -m		Depth -m	Type		
		Scale	Strata				
TOPSOIL Dark brown sand silty gravelly clay TOPSOIL with abundant fine roots. Gravel is fine to coarse sub angular limestone.		0.00	(0.30) 0.30	0.20	D		
CORNBRASH Soft to firm friable brown sand slightly silty gravelly CLAY. Gravel is fine to coarse angular to sub angular limestone.			(0.20) 0.50 (0.40) 0.90	0.50	D		
CORNBRASH Medium dense to dense dark brown sandy silty clay gravelly limestone COBBLES. Gravel is fine to coarse angular limestone.		1.00	(0.20) 1.10	1.00 1.40	D D		
CORNBRASH Medium dense to light grey sand silty gravelly limestone COBBLES. Gravel is fine to coarse angular limestone.			(0.90)				
FOREST MARBLE Stiff grey brown matt orange silty sandy gravelly CLAY. Gravel is fine to coarse angular to sub angular limestone.		2.00	2.00	2.00	D		
Trial Pit terminated at 2.00 m		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Backfilled with Site Arisings
3. Trial Pit Dimensions: 0.6 x 3.5 2.0
4. Max Depth of Visable Roots: 0.4
5. Groundwater: Dry
6. Stability: Stable
7. Soakaway Test Performed
8. Logged by MJ to +A2

Ground Level: 93.660m AOD
NGR: 445408: 216578

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP4

Date of Excavation: 10/09/2014

Description of Strata	Strata Change			Samples		Hand Vane (kPa) (Cu)	Water Level -m
	Legend	Depth -m		Depth -m	Type		
		Scale	Strata				
TOPSOIL Brown sandy clay TOPSOIL with limestone gravel.		0.00	(0.30) 0.30	0.10	D		
CORNBRASH Stiff, horizontally-bedded, platy closely fractured orange-brown and buff LIMESTONE with sandy clay on fractures.			(0.65)	0.50 0.50	CBR D		
FOREST MARBLE Stiff light grey closely fissured very silty CLAY with occasional mudstone lithorelicts and nodules.		1.00	0.95	1.00	D	132	Dry
		2.00	(3.05)				
		3.00					
Trial Pit terminated at 4.00 m		4.00	4.00				

Remarks

1. Method of Excavation: JCB
2. Backfilled with Site Arisings
3. Groundwater: dry
4. Stability: Stable
5. Logged by MB to +A2
6. CBR test undertaken

Ground Level: 92.610m AOD
NGR: 44556: 216575

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP5

Date of Excavation: 10/09/2014

Description of Strata	Strata Change			Samples		Hand Vane (kPa) (Cu)	Water Level -m
	Legend	Depth -m		Depth -m	Type		
		Scale	Strata				
		0.00					
TOPSOIL Brown sandy silty TOPSOIL with limestone gravel.			(0.35)				
			0.35				
CORNBRASH Medium dense orange brown sandy clayey limestone GRAVEL.			(0.25)	0.50	D		
			0.60				
FOREST MARBLE Very stiff dessicated light grey fissured CLAY with occasional nodules.		1.00		1.00	D		
				1.00	D		
						+140	
				1.50	D		
			(2.40)				
		2.00					
...becoming green-grey with horizontally aligned mudstone lithorelicts from 2.2m.				2.50	D		
		3.00	3.00				
Trial Pit terminated at 3.00 m							
		4.00					

Remarks

1. Method of Excavation: JCB
2. Backfilled with Site Arisings
3. Groundwater: Dry
4. Stability: Stable
5. Logged by MB to +A2

Ground Level: 93.310m AOD
NGR: 445247: 216404

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP6

Date of Excavation: 11/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Brown sandy clay TOPSOIL with limestone gravel.		0.00	(0.35)	0.10	D		
CORNBRASH Dense dark orange-brown platy fine to coarse limestone GRAVEL with much orange brown very sandy clay in fractures.			0.35 (0.55)	0.50 0.50	CBR D		
FOREST MARBLES Stiff fissured light grey and buff very silty CLAY with nodules.		1.00	0.90	1.00	D		
		2.00	(2.20)	2.00	D		Dry
Trial Pit terminated at 3.10 m		3.00	3.10	3.00	D		
		4.00					

Remarks

1. Method of Excavation: JCB
2. Backfilled with Site Arisings
3. Groundwater: Dry
4. Stability: Stable
5. Logged by MB to +A2
6. CBR test undertaken

Ground Level: 93.260m AOD
NGR: 445323: 216449

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP7

Date of Excavation: 09/09/2014

Description of Strata	Strata Change			Samples		Hand Vane (kPa) (Cu)	Water Level -m
	Legend	Depth -m		Depth -m	Type		
		Scale	Strata				
TOPSOIL Dark brown slightly sandy gravelly silty clay TOPSOIL with abundant fine roots. Gravel is fine to coarse angular to sub angular limestone.		0.00	(0.30) 0.30				
CORNBRASH Medium dense orangey brown slightly clayey slightly sandy gravelly angular limestone COBBLES. Gravel is fine to coarse angular limestone.			(0.30) 0.60	0.50	D		
FOREST MARBLE Stiff grey mottled orange silty CLAY.		1.00	(1.50)	1.00	D		
				1.50	D		
Trial Pit terminated at 2.10 m		2.00	2.10	2.00	D		
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Trail Pit Dimensions: 0.6 x 3.8 x 2.10
3. Max Depth of Visable Roots: 0.4
4. Groundwater: Dry
5. Stability: Stable
6. Soakaway Test Performed
7. Logged by MJ to +A2

Ground Level: 92.510m AOD
NGR: 445441: 216447

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP8

Date of Excavation: 09/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Dark brown gravelly silty clay TOPSOIL with abundant fine roots. Gravel is fine to medium angular limestone.		0.00	(0.30) 0.30	0.10	D		
CORNBRASH Soft to firm brown friable sandy silty gravelly CLAY. Gravel is fine to coarse angular to sub angular limestone.			(0.20) 0.50 (0.20) 0.70	0.40	D		
CORNBRASH Medium dense grey brown sandy clayey gravelly limestone COBBLES. Gravel is fine to coarse angular limestone.		1.00		1.00	D		
FOREST MARBLE Hard grey silty gravelly CLAY. Gravel is fine to coarse angular limestone.			(1.20)	1.30	D		
Trial Pit terminated at 3.50 m		2.00	1.90	2.00	D		
		3.00		3.00	D		
		4.00					

Remarks

1. Method of Excavation: JCB
2. Trial Pit Dimensions: 0.6 x 2.9 x 3.5
3. Max depth of Visable roots: 0.4
4. Groundwater: Dry
5. Stability: Stable
6. Logged by MJ to +A2

Ground Level: 91.970m AOD
NGR: 445506: 216407

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP9

Date of Excavation: 10/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Brown silty sandy TOPSOIL with limestone gravel.		0.00	(0.30) 0.30	0.10	D		
CORNBRASH Strong horizontally-bedded extremely closely fractured, orange brown and buff platey LIMESTONE with sandy clay on fractures.			(0.65) 0.95	0.50	D		
FOREST MARBLE Very stiff light grey fissured silty CLAY with nodules.		1.00		1.00	D		
		2.00	(2.05)	2.00	D		
Trial Pit terminated at 3.00 m		3.00	3.00	3.00	D		
		4.00					

Remarks

1. Method of Excavation: JCB
2. Backfilled with Site Arisings
3. Groundwater: Dry
4. Stability: Stable
5. Logged by MB to +A2

Ground Level: 92.450m AOD
NGR: 445388: 216364

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP10

Date of Excavation: 09/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Dark brown slightly gravelly sandy silty clay TOPSOIL with abundant fine roots. Gravel is fine to coarse angular limestone.		0.00	(0.25) 0.25	0.30	D		
CORNBRASH Stiff orange brown slightly gravelly slightly sandy CLAY. Gravel is firm to medium angular limestone.			(0.25) 0.50	0.80	D		
FOREST MARBLE Very stiff fissured light grey mottled orange silty CLAY.		1.00	(1.30)	1.20	D		
				1.60	D		
FOREST MARBLE Stiff fissured light grey mottled orange brown slightly sandy silty CLAY.		2.00	1.80 (0.30)	2.00	D		
Trial Pit terminated at 2.10 m			2.10				
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Trial Pit Dimensions: 0.6 x 3.4 x 2.1
3. Max Depth of Visable Roots: 0.3
4. Groundwater: Dry
5. Stability: Stable
6. Soakaway Test Performed
7. Logged by MJ to +A2

Ground Level: 91.200m AOD
NGR: 445328: 216244

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP11

Date of Excavation: 11/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Brown sandy clay TOPSOIL with limestone.		0.00	(0.40)	0.10	D		
CORNBRASH Stiff orange brown very sandy CLAY with many coarse angular platy limestone gravels			0.40 (0.20) 0.60	0.40 0.50	CBR D		
FOREST MARBLE Very stiff fissured light grey very desiccated silty CLAY with nodules		1.00	(0.80)	1.00	D		
FOREST MARBLE Stiff fissured light grey silty CLAY with nodules			1.40	1.50	D		
		2.00	(1.30)	2.00	D		Dry
FOREST MARBLE Very strong LIMESTONE *Trial Pit terminated at 2.75 m*		3.00	2.70 (0.05) 2.75				
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2
5. CBR test undertaken

Ground Level: 90.860m AOD
NGR: 445443: 216244

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP12

Date of Excavation: 11/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Brown sandy clay TOPSOIL with limestone gravel		0.00	(0.30) 0.30	0.10	D		
FOREST MARBLE Very stiff light grey and buff very fissured desiccated silty CLAY			(1.00)	0.40 0.50 1.00	CBR D D		
		1.00	1.30				
FOREST MARBLE Stiff fissured light grey and buff silty CLAY with nodules			(1.10)	1.50	D		Dry
		2.00					
FOREST MARBLE Very strong massive LIMESTONE *Trial Pit terminated at 2.45 m*			2.40 (0.05) 2.45	2.40	D		
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2
5. CBR test undertaken

Ground Level: 89.410m AOD
NGR: 445407: 216112

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP13

Date of Excavation: 09/09/2014

Description of Strata	Strata Change			Samples		Hand Vane (kPa) (Cu)	Water Level -m
	Legend	Depth -m		Depth -m	Type		
		Scale	Strata				
TOPSOIL Dark brown slightly sandy slightly gravelly silty clay TOPSOIL with abundant fine roots. Gravel is fine to coarse angular limestone.		0.00	(0.25) 0.25	0.20	D		
CORNBRASH Firm orange brown sandy gravelly CLAY with occasional angular limestone COBBLES. Gravel is fine to coarse angular limestone.			(0.30) 0.55	0.50	D		
FOREST MARBLE Very stiff light fissured light grey mottled orange brown sandy slightly gravelly silty CLAY.		1.00	(1.35)	1.00	D		
				1.50	D		
FOREST MARBLE Very stiff thinly bedded green-grey silty CLAY with many horizontally aligned lithorelicts or mudstone.		2.00	1.90	2.00	D		
			(1.50)				
		3.00					
Trial Pit terminated at 3.40 m			3.40	3.40	D		
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stabilty: stable
4. Backfilled with arisings
5. Logged by MJ to +A2

Ground Level: 89.860m AOD
NGR: 445502: 216141

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP14

Date of Excavation: 10/09/2014

Description of Strata	Strata Change			Samples		Hand Vane (kPa) (Cu)	Water Level -m
	Legend	Depth -m		Depth -m	Type		
		Scale	Strata				
TOPSOIL Brown silty sandy TOPSOIL with limestone gravel.		0.00	(0.35) 0.35	0.30	D		
CORNBRASH Strong horizontally-bedded extremely closely fractured orange-brown and light grey platy LIMESTONE with orange-brown sandy clay in fractures.				0.50	D		
		1.00	(1.05)	1.00	D		
No progress past 1.40m. Limestone too competent. *Trial Pit terminated at 1.40 m*			1.40	1.40	D		
		2.00					
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Backfilled with Site Arisings
3. Trail Pit Dimensions: 0.7 x 1.40 x 3.40m
4. Groundwater: Slight seepage at 1.40m
5. Stability: Stable
6. Logged by MB to +A2
7. Soakaway Test Performed

Ground Level: 91.880m AOD
NGR: 445704: 216599

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP15

Date of Excavation: 12/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Brown sandy clay TOPSOIL with limestone		0.00	(0.30)	0.10	D		
CORNBRASH Dense orange brown very sandy platy angular limestone COBBLES			0.30 (0.25) 0.55	0.40 0.50	CBR D		
CORNBRASH Medium dense orange brown very sandy slightly clayey angular fine to coarse limestone GRAVEL		1.00	(0.55) 1.10	1.00	D		
CORNBRASH Strong closely fractured, horizontaly bedded platy orange brown LIMESTONE No progress past 1.20m			(0.10) 1.20	1.20	D		
Trial Pit terminated at 1.20 m		2.00					Dry
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2
5. CBR test undertaken

Ground Level: 92.080m AOD
NGR: 445648: 216533

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP16

Date of Excavation: 10/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Brown sandy TOPSOIL with limestone gravel.		0.00	(0.30)	0.10	D		
CORNBRASH Dense dark orange-brown platy limestone GRAVEL.			0.30 (0.50)	0.50	D		
CORNBRASH Very dense light orange-brown very sandy clayey limestone GRAVEL.		1.00	0.80 (0.30)	1.00	D		
LIMESTONE Strong extremely closely fractured horizontally bedded platy orange-brown LIMESTONE. No progress past 1.4m			1.10 (0.30)				
Trial Pit terminated at 1.40 m		2.00	1.40	1.40	D		
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2

Ground Level: 91.240m AOD
NGR: 445790: 216534

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP17

Date of Excavation: 10/09/2014

Description of Strata	Strata Change			Samples		Hand Vane (kPa) (Cu)	Water Level -m
	Legend	Depth -m		Depth -m	Type		
		Scale	Strata				
TOPSOIL Brown sandy TOPSOIL with limestone gravel.		0.00	(0.50)	0.10	D		
			0.50	0.50	D		
CORNBRASH Strong horizontally bedded, extremely closely fractured, platy orange-brown LIMESTONE with sandy clay in fractures.		1.00	(0.80)	1.00	D		
			1.30				
FOREST MARBLE Very stiff fissured light grey silty CLAY with nodules.		2.00	(1.70)	1.50	D	+140	
				2.50	D		
Trial Pit terminated at 3.00 m		3.00	3.00				
		4.00					

Remarks

1. Method of Excavation: JCB
2. Backfilled with Site Arisings
3. Groundwater: Dry
4. Stability: Stable
5. Logged by MB to +A2

Ground Level: 91.480m AOD
NGR: 445603: 216416

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP18

Date of Excavation: 10/09/2014

Description of Strata	Strata Change			Samples		Hand Vane (kPa) (Cu)	Water Level -m
	Legend	Depth -m		Depth -m	Type		
		Scale	Strata				
TOPSOIL Dark brown very gravelly sandy clayey silty TOPSOIL. Gravel is fine to coarse angular limestone.		0.00	(0.25) 0.25				
CORNBRASH Medium dense brown sandy gravelly angular limestone COBBLES. Gravel is fine to coarse angular limestone.			(0.25) 0.50	0.50	D		
CORNBRASH Strong horizontally-bedded orange-brown and light grey extremely closely fractured platy LIMESTONE. No progress past 1.10.		1.00	(0.60) 1.10	1.00	D		
Trial Pit terminated at 1.10 m		2.00					
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Backfilled with Site Arisings
3. Groundwater: Dry
4. Stability: Stable
5. Logged by MJ to +A2

Ground Level: 91.150m AOD
NGR: 445761: 216458

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP19

Date of Excavation: 12/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Brown sandy clay TOPSOIL with limestone gravel		0.00	(0.25) 0.25	0.10	D		
CORNBRASH Dense orange brown very sandy angular platy fine to coarse limestone GRAVEL AND COBBLES			(0.55) 0.80	0.50	D		
CORNBRASH Dense light orange very sandy angular fine to coarse limestone GRAVEL		1.00	(0.50) 1.30	1.00	D		
CORNBRASH Strong closely fractured, horizontaly bedded platy orange brown LIMESTONE No progress past 1.40m			(0.10) 1.40				
Trial Pit terminated at 1.40 m		2.00					Dry
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2

Ground Level: 90.020m AOD
NGR: 445862: 216425

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP20

Date of Excavation: 10/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Brown silty sandy TOPSOIL with limestone gravel.		0.00	(0.35) 0.35	0.10	D		
CORNBRASH Dense orange-brown very sandy clayey limestone GRAVEL.		1.00	(1.05)	0.50 1.10	D D		
CORNBRASH Strong extremely closely fractured orange-brown horizontally bedded, platy LIMESTONE with sandy clay on fractures. No progress past 1.60m. *Trial Pit terminated at 1.60 m*		2.00 3.00 4.00	1.40 (0.20) 1.60	1.50	D		

Remarks

1. Method of Excavation: JCB
2. Backfilled with Site Arisings
3. Groundwater: Dry
4. Stability: Stable
5. Logged by MB to +A2

Ground Level: 90.230m AOD
NGR: 445895: 216489

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP21

Date of Excavation: 10/09/2014

Description of Strata	Strata Change			Samples		Hand Vane (kPa) (Cu)	Water Level -m
	Legend	Depth -m		Depth -m	Type		
		Scale	Strata				
TOPSOIL Brown silty sandy TOPSOIL with many platy limestone gravels.		0.00	(0.40)	0.10	D		
CORNBRASH Strong platy orange-brown and grey extremely closely fractured horizontally bedded LIMESTONE with ornage-brown sandy clay in fractures.			0.40 (0.45)	0.50	D		
FOREST MARBLE Stiff to very stiff fissured light grey and buff mottled very silty CLAY with occasional nodules.		1.00	0.85	1.00	D		
			(1.35)	1.50	D		
		2.00		2.00	D		
Trial Pit terminated at 2.20 m			2.20				
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Backfilled with Site Arisings
3. Trial Pit Dimensions: 0.70 x 2.30 x 2.20m
4. Groundwater: Dry
5. Stability: Stable
6. Logged by MB to +A2
7. Soakaway Test Performed

Ground Level: 91.210m AOD
NGR: 445593: 216319

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP22

Date of Excavation: 10/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Brown silty sandy TOPSOIL with medium limestone gravel.		0.00	(0.35)	0.10	D		
CORNBRASH Strong orange-brown and light grey extremely closely fractured platy horizontally bedded LIMESTONE with orange-brown sandy clay in fractures.			0.35 (0.75)	0.50	D		
FOREST MARBLE Stiff to very stiff fissured light grey and buff mottled closely fissured silty CLAY with nodules.		1.00	1.10	1.00	D		
				1.50	D		
		2.00	(1.30)	2.00	D		
Trial Pit terminated at 2.40 m			2.40				
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Backfilled with Site Arisings
3. Trial Pit Dimensions: 0.70 x 2.30 x 2.40m
4. Groundwater: Dry
5. Stability: Stable
6. Logged by MB to +A2
7. Soakaway Test Performed

Ground Level: 90.870m AOD
NGR: 445699: 216375

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP23

Date of Excavation: 12/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Brown sandy clay TOPSOIL with limestone fragments		0.00	(0.30)	0.10	D		
			0.30	0.30	CBR		
CORNBRASH Dense orange brown very sandy angular platy fine to coarse limestone GRAVEL AND COBBLES			(0.40)	0.50	D		
			0.70				
CORNBRASH Strong extremely closely fractured, horizontaly bedded platy orange brown LIMESTONE		1.00	(0.50)	1.00	D		
			1.20				
FOREST MARBLE Stiff light grey and buff fissured silty CLAY with nodules				1.50	D	132	
		2.00	(1.50)	2.00	D		Dry
			2.70				
Trial Pit terminated at 2.70 m		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2
5. CBR test undertaken

Ground Level: 90.100m AOD
NGR: 445775: 216323

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP24

Date of Excavation: 12/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Brown sandy clay TOPSOIL with limestone gravel		0.00	(0.30)	0.10	D		
CORNBRASH Dense dark orange brown platy coarse limestone GRAVEL			0.30 (0.30) 0.60	0.40 0.50	CBR D		
CORNBRASH Very dense light orange brown very sandy clay platy limestone GRAVEL		1.00	(1.00)	1.00	D		
CORNBRASH Very strong closely fractured, orange brown LIMESTONE No progress past 1.70m			1.60 (0.10) 1.70	1.50	D		
Trial Pit terminated at 1.70 m		2.00					Dry
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2
5. CBR test undertaken

Ground Level: 88.980m AOD
NGR: 445946: 216375

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP25

Date of Excavation: 12/09/2014

Description of Strata	Strata Change			Samples		Hand Vane (kPa) (Cu)	Water Level -m
	Legend	Depth -m		Depth -m	Type		
		Scale	Strata				
TOPSOIL Brown sandy clay TOPSOIL with limestone gravel		0.00	(0.30) 0.30	0.10	D		
CORNBRASH Strong horizontally bedded extremely closely fractured platy orange brown LIMESTONE with orange sandy clay in fractures			(0.40) 0.70	0.50	D		
CORNBRASH Dense light orange brown very sandy clay limestone GRAVEL		1.00	(0.60) 1.30	1.00	D		
CORNBRASH Very strong horizontally bedded closely fractured, platy orange brown LIMESTONE			(0.40) 1.70	1.50	D		
No progress past 1.70m *Trial Pit terminated at 1.70 m*		2.00					Dry
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2

Ground Level: 88.420m AOD
NGR: 446043: 216422

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP26

Date of Excavation: 09/09/2014

Description of Strata	Strata Change			Samples		Hand Vane (kPa) (Cu)	Water Level -m
	Legend	Depth -m		Depth -m	Type		
		Scale	Strata				
TOPSOIL Dark brown slightly gravelly silty slightly sandy clayey TOPSOIL with abundant fine to coarse angular limestone.		0.00	(0.25) 0.25				
CORNBRASH Medium dense brown slightly clayey sandy gravelly angular limestone COBBLES. Gravel is fine to coarse angular limestone.			(0.35) 0.60	0.50	D		
CORNBRASH Strong horizontally bedded extremely closely fractured platy orange-brown and buff LIMESTONE with orange-brown sandy clay in fractures.		1.00	(0.50) 1.10	1.00	D		
Trial Pit terminated at 1.10 m		2.00					
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB/360
2. Backfilled with Site Arisings
3. Max depth of Visible Roots: 0.3m
4. Groundwater: Dry
5. Stability: Stable
6. Logged by MJ to +A2

Ground Level: 89.360m AOD
NGR: 445756: 216217

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP27

Date of Excavation: 12/09/2014

Description of Strata	Strata Change			Samples		Hand Vane (kPa) (Cu)	Water Level -m
	Legend	Depth -m		Depth -m	Type		
		Scale	Strata				
TOPSOIL Brown sandy clay TOPSOIL with limestone gravel		0.00	(0.45)	0.10	D		
CORNBRASH Dense orange brown very sandy clayey limestone and sandy limestone GRAVEL			0.45 (0.25) 0.70	0.45 0.50	CBR D		
CORNBRASH Strong horizontally bedded closely fractured, platy orange brown LIMESTONE		1.00	(0.60)	1.00	D		
Trial Pit terminated at 1.30 m			1.30				Dry
		2.00					
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2
5. CBR test undertaken

Ground Level: 88.340m AOD
NGR: 445891: 216240

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP28

Date of Excavation: 09/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Dark brown sandy gravelly clayey silty TOPSOIL. Gravel is fine to coarse angular limestone.		0.00	(0.50)				
			0.50	0.50	D		
CORNBRASH Loose dark brown sandy clay gravelly angular limestone COBBLES. Gravel is fine to coarse angular limestone.			(0.30) 0.80				
CORNBRASH Medium dense dense orange brown sandy gravelly angular limestone COBBLES. Gravel is fine to coarse angular limestone with ornage-brown sandy clay matrix.		1.00	(0.60)	1.00	D		
			1.40				
CORNBRASH Strong orange-brown and slightly grey horizontally bedded platy LIMESTONE. ...groundwater seepage at 1.40m sitting at 1.6m No progress past 1.70m.			(0.30) 1.70	1.50	D		
Trial Pit terminated at 1.70 m		2.00					
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Backfilled with Site Arisings
3. Groundwater: Slight seepage at 1.4m
4. Stability: Stable
5. Logged by MJ to +A2

Ground Level: 87.530m AOD
NGR: 446055: 216037

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP29

Date of Excavation: 11/09/2014

Description of Strata	Strata Change			Samples		Hand Vane (kPa) (Cu)	Water Level -m
	Legend	Depth -m Scale	Depth -m Strata	Depth -m	Type		
TOPSOIL Dark brown cobbly gravelly CLAY. Cobbles and gravel subrounded and subangular limestone		0.00	(0.30) 0.30	0.10	D		
CORNBRASH Yellowish orange cobbly gravelly SAND. Cobbles and gravel are subrounded and subangular limestone. Cobbles become more frequent further down trial pit			(1.00)	0.50	D		
		1.00		1.00	D		
Trial pit terminated on hard (limestone) layer *Trial Pit terminated at 1.30 m*			1.30				Dry
		2.00					
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2
5. Soakaway test performed

Ground Level: 87.170m AOD
NGR: 446182: 216369

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP30

Date of Excavation: 12/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Brown sandy clay TOPSOIL with limestone gravel		0.00	(0.35)	0.10	D		
CORNBRASH Strong extremely closely fractured orange brown horizontally bedded platy LIMESTONE with orange brown sandy clay on fractures			0.35 (0.55)	0.50	D		
CORNBRASH Dense orange brown very sandy slightly clayey limestone GRAVEL		1.00	0.90 (0.30)	1.00	D		
CORNBRASH Strong horizontally bedded closely fractured, platy orange brown and grey LIMESTONE No progress past 1.30m			1.20 (0.10) 1.30	1.30	D		
Trial Pit terminated at 1.30 m		2.00					Dry
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2
5. Soakaway test performed
6. Trial pit dimensions: 0.8 x 3.05 x 1.3m

Ground Level: 86.070m AOD
NGR: 446302: 216347

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP31

Date of Excavation: 12/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Brown sandy clay TOPSOIL with limestone gravel		0.00	(0.30) 0.30	0.10	D		
CORNBRASH Strong extremely closely fractured orange brown horizontally bedded platy LIMESTONE with sandy clay on fractures			(0.20) 0.50	0.50	D		
CORNBRASH Medium dense orange brown very sandy clayey angular fine to coarse limestone GRAVEL			(0.25) 0.75	0.80	D		
CORNBRASH Very strong horizontally bedded closely fractured, orange brown LIMESTONE			(0.05) 0.80				
Trial Pit terminated at 0.80 m		1.00					
		2.00					Dry
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2
5. Trial pit dimensions: 0.7 x 3.0 x 0.8m
6. Soakaway test performed

Ground Level: 88.100m AOD
NGR: 445826: 216156

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP32

Date of Excavation: 11/09/2014

Description of Strata	Strata Change			Samples		Hand Vane (kPa) (Cu)	Water Level -m
	Legend	Depth -m		Depth -m	Type		
		Scale	Strata				
TOPSOIL Dark brown cobbly gravelly CLAY. Cobbles and gravel are subangular limestone		0.00	(0.30) 0.30	0.10	D		
CORNBRASH Light yellow cobbly gravelly SAND. Cobbles and gravel are subrounded to subangular limestone gettig more cobbly deeper into trial pit			(0.80)	0.50	D		
Trial pit terminated due to impenetratable limestone layer *Trial Pit terminated at 1.10 m*		1.00	1.10	1.00	D		Dry
		2.00					
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2
5. Soakaway test performed

Ground Level: 8.247m AOD
NGR: 446045: 216217

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP33

Date of Excavation: 12/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Brown sandy clay TOPSOIL with limestone gravel		0.00	(0.30) 0.30	0.10	D		
CORNBRASH Dense orange brown very sandy platy limestone COBBLES			(0.40) 0.70	0.40 0.50	CBR D		
CORNBRASH Dense light orange brown very sandy slightly clayey angular fine to coarse limestone GRAVEL		1.00	(0.40) 1.10	1.00	D		
CORNBRASH Strong closely fractured, horizontaly bedded platy orange brown LIMESTONE No progress past 1.20m			(0.10) 1.20				
Trial Pit terminated at 1.20 m		2.00					Dry
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2
5. CBR test undertaken

Ground Level: 85.920m AOD
NGR: 446242: 216265

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP34

Date of Excavation: 09/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Dark brown slightly clayey gravelly sandy silty TOPSOIL. Gravel is fine to coarse angular limestone.		0.00	(0.30) 0.30	0.10	D		
CORNBRASH Medium dense orange sandy gravelly angular limestone COBBLES. Gravel is fine to coarse.				0.50	D		
		1.00	(1.30)	1.00	D		
				1.50	D		
FOREST MARBLE Stiff light grey mottled orange slightly gravelly slightly sandy silty CLAY. Gravel is firm slightly angular limestone.			1.60				
		2.00		2.00	D		
			(1.40)				
				2.50	D		
Trial Pit terminated at 3.10 m		3.00	3.00	3.00	D		
		4.00					

Remarks

1. Method of Excavation: JCB
2. Backfilled with Site Arisings
3. Trail Pit Dimensions: 0.6 x 2.8 x 3.1
4. Max depth of Visible Roots: 0.4
5. Groundwater: Dry
6. Stability: Stable
7. Logged by MJ to +A2

Ground Level: 87.580m AOD
NGR: 445632: 215963

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP35

Date of Excavation: 11/09/2014

Description of Strata	Strata Change			Samples		Hand Vane (kPa) (Cu)	Water Level -m
	Legend	Depth -m Scale	Depth -m Strata	Depth -m	Type		
TOPSOIL Brown sandy clay TOPSOIL with limestone gravel		0.00	(0.35) 0.35	0.10	D		
CORNBRASH Strong extremely closely fractured orange brown platy horizontally bedded LIMESTONE			(0.45) 0.80	0.40 0.50	CBR D		
CORNBRASH Dense orange brown very sandy slightly clayey fine to coarse LIMESTONE and sandy limestone GRAVEL		1.00	(0.55) 1.35	1.00	D		
CORNBRASH Strong closely fractured, horizontaly bedded platy grey and orange brown LIMESTONE			(0.05) 1.40				
Trial Pit terminated at 1.40 m		2.00					Dry
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2
5. CBR test undertaken

Ground Level: 87.180m AOD
NGR: 445825: 216032

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP36

Date of Excavation: 09/09/2014

Description of Strata	Strata Change			Samples		Hand Vane (kPa) (Cu)	Water Level -m
	Legend	Depth -m		Depth -m	Type		
		Scale	Strata				
TOPSOIL Dark brown sand gravelly clayey silty TOPSOIL. Gravel is fine to coarse angular limestone.		0.00	(0.25) 0.25				
CORNBRASH Medium dense orange-brown sandy silty GRAVEL with occasional limestone COBBLES. Gravel is fine to coarse angular limestone.			(0.40) 0.65	0.50	D		
CORNBRASH Strong horizontally-bedded orange-brown and light grey extremely closely fractured platy LIMESTONE with orange-brown sandy clay in fractures. No progress past 1.40m. *Trial Pit terminated at 1.40 m*		1.00	(0.75) 1.40	1.00 1.40	D D		
		2.00					
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Backfilled with Site Arisings
3. Groundwater: Dry
4. Stability: Stable
5. Logged by MJ to +A2

Ground Level: 86.350m AOD
NGR: 445995: 216103

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP37

Date of Excavation: 12/09/2014

Description of Strata	Strata Change			Samples		Hand Vane (kPa) (Cu)	Water Level -m
	Legend	Depth -m		Depth -m	Type		
		Scale	Strata				
TOPSOIL Brown sandy clay TOPSOIL with limestone gravel		0.00	(0.35)	0.10	D		
CORNBRASH Strong extremely closely fractured orange brown platy horizontally bedded LIMESTONE			0.35 (0.45)	0.40 0.50	CBR D		
CORNBRASH Dense light orange brown very sandy angular slightly clayey fine to coarse limestone GRAVEL		1.00	0.80 (0.30)	1.00	D		
CORNBRASH Very strong closely fractured, horizontaly bedded platy orange brown LIMESTONE			1.10 (0.10)				
Trial Pit terminated at 1.20 m		2.00	1.20				Dry
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2
5. CBR test undertaken

Ground Level: 85.820m AOD
NGR: 446156: 216137

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP38

Date of Excavation: 12/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Brown sandy clay TOPSOIL with limestone gravel		0.00	(0.35)	0.10	D		
CORNBRASH Medium dense orange brown very sandy slightly clayey angular platy fine to coarse limestone GRAVEL and COBBLES			0.35 (0.95)	0.50	D		
		1.00		1.00	D		
FOREST MARBLE Stiff fissured light grey and buff very silty CLAY with nodules			1.30 (0.10) 1.40	1.40	D		
Trial Pit terminated at 1.40 m		2.00					Dry
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2
5. Trial pit dimensions: 3.0 x 0.70 x 1.40m
6. Soakaway test performed

Ground Level: 85.720m AOD
NGR: 445703: 215858

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP39

Date of Excavation: 12/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Brown sandy clay TOPSOIL with limestone gravel		0.00	(0.30) 0.30	0.10	D		
CORNBRASH Strong extremely closely fractured orange brown platy horizontally bedded LIMESTONE with sandy CLAY in fractures			(0.20) 0.50	0.50	D		
CORNBRASH Medium dense orange brown very sandy angular slightly clayey fine to coarse limestone GRAVEL and occasional cobbles		1.00	(0.25) 0.75	0.80	D		
CORNBRASH Very strong closely fractured, horizontaly bedded platy orange brown LIMESTONE No progress past 0.80m			(0.05) 0.80				
Trial Pit terminated at 0.80 m		2.00					Dry
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2
5. Trial pit dimensions: 0.70 x 3.30 x 0.80m
6. Soakaway test performed

Ground Level: 85.350m AOD
NGR: 445995: 215957

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

LOCATION: Land East of Woodstock, Oxon

TRIAL PIT: TP40

Date of Excavation: 12/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Samples: Depth -m	Samples: Type	Hand Vane (kPa) (Cu)	Water Level -m
TOPSOIL Dark brown sandy clay TOPSOIL with limestone gravel		0.00	(0.30)	0.10	D		
			0.30	0.40	CBR		
CORNBRASH Strong extremely closely fractured, horizontaly bedded platy orange brown fossiliferous LIMESTONE No progress past 0.80m			(0.50)	0.50	D		
Trial Pit terminated at 0.80 m			0.80				
		1.00					
		2.00					Dry
		3.00					
		4.00					

Remarks

1. Method of Excavation: JCB
2. Groundwater: Dry
3. Stability: Stable
4. Logged by MB to +A2
5. CBR test undertaken

Ground Level: 84.820m AOD
NGR: 445886: 215792

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
B	Bulk Sample
D	Small Disturbed Sample
V	Vane Test
K	Chemical Sample
J	Jar Sample
CBR	CBR Sample
C	Core

TRIAL PIT LOG

Report No. 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxfordshire

BOREHOLE NO. BH101

Date of Boring: 09/09/2014

Description of Strata	Strata Change: Legend	Depth -m: Scale	Depth -m: Strata	Core Run Depth -m	TCR %	SCR %	RQD %
TOPSOIL Dark brown clayey TOPSOIL		0.0	0.40		0	0	0
CORNBRASH Dense orange-brown sandy clayey limestone GRAVEL			(0.70)				
		1.0	1.10				
CORNBRASH Strong orange-brown horizontally bedded extremely closely fractured platy LIMESTONE with clay on fractures			1.45				
FOREST MARBLE Very stiff thinly bedded closely fissured light grey and brown mottled CLAY		2.0	(2.60)				
		3.0					
FOREST MARBLE Very strong grey massive crystalline LIMESTONE		4.0	4.05		0	0	0
			(0.55)				
FOREST MARBLE Very stiff dark grey horizontally bedded, thinly			4.60		0	0	0
Continued next sheet		5.0	(0.55)				

Ground Level: 93.06mAOD

Eastings: 445512

Northings: 216644

Instrumentation: Standpipe to base of borehole. Slotted section from 2m bgl to 15m bgl.

Remarks:
1. Undertaken using Comacchio 305 rotary / percussive rig.
2. Rotary method using mist flush.
3. Logged my Murray Bateman to +A2.

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
TCR	Total Core Recovery (%)
SCR	Solid Core Recovery (%)
RQD	Rock Quality Designation
SPT	Standard Penetration Test
CPT	Cone Penetration Test

BOREHOLE LOG

Report No: 14.08.005a

LOCATION: Land East of Woodstock, Oxfordshire

BOREHOLE NO. BH101

Date of Boring: 09/09/2014

Description of Strata	Strata Change: Legend	Depth -m: Scale	Depth -m: Strata	Core Run Depth -m	TCR %	SCR %	RQD %
Remaining Detail : 4.60m - 5.15m : bedded closely fissured CLAY - at 5.00-5.05m, thin bed of strong LIMESTONE		5.0	5.15		100	100	0
FOREST MARBLE Very weak dark grey horizontally bedded MUDSTONE			5.40		0	0	0
FOREST MARBLE Very stiff dark grey horizontally bedded, thinly bedded closely fissured CLAY		6.0	(1.25)				
FOREST MARBLE Very strong grey thickly bedded crystalline LIMESTONE - at 7.25m to 7.35m very weak sandy grey mudstone		7.0	6.65 (0.85)		100	100	64
FOREST MARBLE Very strong grey massive fossiliferous crystalline LIMESTONE			7.50 (0.57)		100	100	100
FOREST MARBLE Weak grey thickly bedded calcareous medium grained SANDSTONE		8.0	8.07		100	90	0
FOREST MARBLE Very strong light grey massive fossiliferous crystaline LIMESTONE with some glauconite cement (green colouring)			8.30		100	100	100
		9.0	(1.75)				
Continued next sheet		10.0					

Ground Level: 93.06mAOD

Eastings: 445512

Northings: 216644

Instrumentation: Standpipe to base of borehole. Slotted section from 2m bgl to 15m bgl.

Remarks:
1. Undertaken using Comacchio 305 rotary / percussive rig.
2. Rotary method using mist flush.
3. Logged my Murray Bateman to +A2.

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
TCR	Total Core Recovery (%)
SCR	Solid Core Recovery (%)
RQD	Rock Quality Designation
SPT	Standard Penetration Test
CPT	Cone Penetration Test

BOREHOLE LOG

Report No: 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxfordshire

BOREHOLE NO. BH101

Date of Boring: 09/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Core Run Depth -m	TCR %	SCR %	RQD %
FOREST MARBLE		10.0	10.05		100	100	100
FOREST MARBLE Very strong dark grey massive very fossiliferous crystalline LIMESTONE			(0 75)				
			10.80		100	90	60
FOREST MARBLE Weak dark grey thinly bedded very fossiliferous silty MUDSTONE with sand lenses		11.0	(0 80)				
- becoming very sandy and closely fractured from 11.40 to 11.60m			11.60		95	85	79
FOREST MARBLE Very strong grey massive crystalline fossiliferous LIMESTONE		12.0					
		13.0					
- from 13.10-14.40m, closely spaced sub-horizontal and sub-vertical rough fractures			(3 40)				
		14.0					
Base of borehole at 15.00 m		15.0					

Ground Level: 93.06mAOD

Eastings: 445512

Northings: 216644

Instrumentation: Standpipe to base of borehole. Slotted section from 2m bgl to 15m bgl.

Remarks:
1. Undertaken using Comacchio 305 rotary / percussive rig.
2. Rotary method using mist flush.
3. Logged my Murray Bateman to +A2.

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
TCR	Total Core Recovery (%)
SCR	Solid Core Recovery (%)
RQD	Rock Quality Designation
SPT	Standard Penetration Test
CPT	Cone Penetration Test

BOREHOLE LOG

Report No: 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxfordshire

BOREHOLE NO. BH102

Date of Boring: 10/09/2014

Description of Strata	Strata Change: Legend	Depth -m: Scale	Depth -m: Strata	Core Run Depth -m	TCR %	SCR %	RQD %
TOPSOIL Dark orange-brown silty TOPSOIL with limestone gravel		0.0	0.35				
CORNBRASH Dense orange-brown fractured limestone GRAVEL			0.65				
CORNBRASH Stiff orange-brown and grey silty CLAY with calcareous nodules		1.0	(0.85)				
NO RECOVERY			1.50				
		2.0	(1.00)				
FOREST MARBLE Very stiff thinly bedded light-grey and brown mottled very closely fissured CLAY with occasional mudstone lithorelics			2.50				
		3.0	(1.25)				
FOREST MARBLE Very weak dark grey thinly bedded fossiliferous very closely fractured MUDSTONE with lenses of very stiff clay			3.75		50	25	0
		4.0	(1.65)				
		5.0					

Continued next sheet

Ground Level: 91.67mAOD

Eastings: 445472

Northings: 216326

Instrumentation: Standpipe to base of borehole. Slotted section from 2m bgl to 15m bgl.

Remarks:
1. Undertaken using Comacchio 305 rotary / percussive rig.
2. Rotary method using mist flush.
3. Logged my Murray Bateman to +A2.

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
TCR	Total Core Recovery (%)
SCR	Solid Core Recovery (%)
RQD	Rock Quality Designation
SPT	Standard Penetration Test
CPT	Cone Penetration Test

BOREHOLE LOG

Report No: 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxfordshire

BOREHOLE NO. BH102

Date of Boring: 10/09/2014

Description of Strata	Strata Change: Legend	Depth -m: Scale	Depth -m: Strata	Core Run Depth -m	TCR %	SCR %	RQD %
Remaining Detail : 4.80m - 5.40m : - at 4.80-4.90m soft dark grey wet CLAY - at 5.18-5.25m strong LIMESTONE bed		5.0	5.40		100	100	100
FOREST MARBLE Very strong light grey crystalline slightly fossiliferous LIMESTONE with sub-horizontal bedding			(0.60)				
FOREST MARBLE Very stiff dark grey silty CLAY with much mudstone lenses		6.0	6.00 (0.70)				
FOREST MARBLE Very strong light grey highly fossiliferous crystalline LIMESTONE		7.0	6.70 (0.90)		100	100	100
FOREST MARBLE Very strong dark grey fossiliferous slightly sandy LIMESTONE		8.0	7.60 (0.70)		100	100	100
FOREST MARBLE Very strong light grey highly fossiliferous crystalline LIMESTONE			8.30 (0.70)		100	100	100
FOREST MARBLE Very stiff green-grey silty CLAY with large gravel sized white calcareous nodules and occasional fossils		9.0	9.00				
FOREST MARBLE Very weak dark grey and occasional black horizontally bedded closely fractured MUDSTONE with many			9.40 (0.57)		20	15	0
Continued next sheet		10.0	9.97		100		

Ground Level: 91.67mAOD

Eastings: 445472

Northings: 216326

Instrumentation: Standpipe to base of borehole. Slotted section from 2m bgl to 15m bgl.

Remarks:
1. Undertaken using Comacchio 305 rotary / percussive rig.
2. Rotary method using mist flush.
3. Logged my Murray Bateman to +A2.

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
TCR	Total Core Recovery (%)
SCR	Solid Core Recovery (%)
RQD	Rock Quality Designation
SPT	Standard Penetration Test
CPT	Cone Penetration Test

BOREHOLE LOG

Report No: 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxfordshire

BOREHOLE NO. BH102

Date of Boring: 10/09/2014

Description of Strata	Strata Change: Legend	Depth -m: Scale	Depth -m: Strata	Core Run Depth -m	TCR %	SCR %	RQD %
9.40m - 9.97m : Remaining Detail : 9.40m - 9.97m : fossils, lignite and bands of very stiff clay		10.0				70	0
9.97m - 10.30m : FOREST MARBLE Detail 9.97m - 10.30m : Moderately weak dark grey fossiliferous calcareous medium grained SANDSTONE			10.30		100	65	55
FOREST MARBLE Very strong light grey massive crystalline fossiliferous LIMESTONE with widely spaced sub-horizontal fractures and one sub-vertical fracture from 10.50m to 11.50m		11.0					
		12.0					
- at 12.60m to 12.65m thin lense of grey mudstone			(4 70)				
		13.0					
		14.0					
Base of borehole at 15.00 m		15.0					

Ground Level: 91.67mAOD

Eastings: 445472

Northings: 216326

Instrumentation: Standpipe to base of borehole. Slotted section from 2m bgl to 15m bgl.

Remarks:
1. Undertaken using Comacchio 305 rotary / percussive rig.
2. Rotary method using mist flush.
3. Logged my Murray Bateman to +A2.

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
TCR	Total Core Recovery (%)
SCR	Solid Core Recovery (%)
RQD	Rock Quality Designation
SPT	Standard Penetration Test
CPT	Cone Penetration Test

BOREHOLE LOG

Report No: 14.08.005a

LOCATION: Land East of Woodstock, Oxfordshire

BOREHOLE NO. BH103

Date of Boring: 11/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Core Run Depth -m	TCR %	SCR %	RQD %
TOPSOIL Dark brown clayey TOPSOIL with limestone gravel		0.0	0.10		100	0	0
CORNBRASH Strong extremely closely fractured platy, completely weathered orange-brown LIMESTONE with much sandy clay on fractures			(1.40)				
		1.0	1.50		20	0	0
POOR CORE RECOVERY							
		2.0	(1.50)				
FOREST MARBLE Stiff grey-green thinly laminated horizontally bedded CLAY with mudstone lithorelics		3.0	3.00		60	0	0
			(0.70)				
FOREST MARBLE Very weak extremely closely fractured dark grey horizontally bedded MUDSTONE			3.70		100	0	0
		4.0	4.10		100	100	0
FOREST MARBLE Strong grey LIMESTONE			4.17		100	100	0
			4.37		100	100	80
FOREST MARBLE Very weak extremely closely fractured dark grey horizontally bedded MUDSTONE			4.65		100	100	0
Continued next sheet		5.0	(0.55)				

Ground Level: 90.52mAOD

Eastings: 445831

Northings: 216447

Instrumentation: Standpipe to base of borehole. Slotted section from 2m bgl to 15m bgl.

Remarks:
1. Undertaken using Comacchio 305 rotary / percussive rig.
2. Rotary method using mist flush.
3. Logged my Murray Bateman to +A2.

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
TCR	Total Core Recovery (%)
SCR	Solid Core Recovery (%)
RQD	Rock Quality Designation
SPT	Standard Penetration Test
CPT	Cone Penetration Test

BOREHOLE LOG

Report No: 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxfordshire

BOREHOLE NO. BH103

Date of Boring: 11/09/2014

Description of Strata	Strata Change: Legend	Depth -m: Scale	Depth -m: Strata	Core Run Depth -m	TCR %	SCR %	RQD %
4.37m - 4.65m : FOREST MARBLE Detail 4.37m - 4.65m : Strong grey LIMESTONE		5.0	5.20		100	100	80
4.65m - 5.20m : FOREST MARBLE Detail 4.65m - 5.20m : Very stiff dark grey silty CLAY with mudstone lithorelics			(1.00)				
FOREST MARBLE Very strong grey crystalline closely spaced fractures LIMESTONE - clay filled fractures at 5.50m, 5.65m & 5.90m		6.0	6.20				
FOREST MARBLE Very stiff dark grey thinly laminated CLAY with mudstone lithorelics			(1.15)				
		7.0	7.35		100	100	70
FOREST MARBLE Strong grey crystalline LIMESTONE with glauconitic cement			(0.55)				
FOREST MARBLE Strong dark grey massive fossiliferous LIMESTONE		8.0	7.90		100	100	90
FOREST MARBLE Strong grey crystalline LIMESTONE with glauconitic cement			8.35		100	100	90
			(0.80)				
FOREST MARBLE Very strong massive dark grey fossiliferous LIMESTONE		9.0	9.15		100	100	100
			(0.80)				
Continued next sheet		10.0	9.95		100		

Ground Level: 90.52mAOD

Eastings: 445831

Northings: 216447

Instrumentation: Standpipe to base of borehole. Slotted section from 2m bgl to 15m bgl.

Remarks:
1. Undertaken using Comacchio 305 rotary / percussive rig.
2. Rotary method using mist flush.
3. Logged my Murray Bateman to +A2.

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
TCR	Total Core Recovery (%)
SCR	Solid Core Recovery (%)
RQD	Rock Quality Designation
SPT	Standard Penetration Test
CPT	Cone Penetration Test

BOREHOLE LOG

Report No: 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxfordshire

BOREHOLE NO. BH103

Date of Boring: 11/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Core Run Depth -m	TCR %	SCR %	RQD %
FOREST MARBLE Detail 9.95m - 10.60m : Weak dark grey very fossiliferous sandy calcareous MUDSTONE		10.0	(0.65) 10.60			80	20
FOREST MARBLE Very strong grey massive crystalline fossiliferous LIMESTONE with secondary mineralisation		11.0			100	80	70
		12.0					
		13.0	(4.40)				
- large sub-vertical joint with black weathering from 14.0m to 15.0m		14.0					
Base of borehole at 15.00 m		15.0					

Ground Level: 90.52mAOD

Eastings: 445831

Northings: 216447

Instrumentation: Standpipe to base of borehole. Slotted section from 2m bgl to 15m bgl.

Remarks:
1. Undertaken using Comacchio 305 rotary / percussive rig.
2. Rotary method using mist flush.
3. Logged my Murray Bateman to +A2.

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
TCR	Total Core Recovery (%)
SCR	Solid Core Recovery (%)
RQD	Rock Quality Designation
SPT	Standard Penetration Test
CPT	Cone Penetration Test

BOREHOLE LOG

Report No: 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxfordshire

BOREHOLE NO. BH104

Date of Boring: 12/09/2014

Description of Strata	Strata Change: Legend	Depth -m: Scale	Depth -m: Strata	Core Run Depth -m	TCR %	SCR %	RQD %
TOPSOIL		0.0	0.30				
No recovery - only Cornbrash fragments		1.0	(2.70)		0	0	0
FOREST MARBLE Stiff green-grey silty CLAY		2.0 3.0	3.00		100	0	0
Continued next sheet		4.0 5.0	(1.80) 4.80		80	70	15

Ground Level: 88.36mAOD

Eastings: 445866

Northings: 216213

Instrumentation: Standpipe to base of borehole. Slotted section from 2m bgl to 15m bgl.

Remarks:
1. Undertaken using Comacchio 305 rotary / percussive rig.
2. Rotary method using mist flush.
3. Logged my Murray Bateman to +A2.

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
TCR	Total Core Recovery (%)
SCR	Solid Core Recovery (%)
RQD	Rock Quality Designation
SPT	Standard Penetration Test
CPT	Cone Penetration Test

BOREHOLE LOG

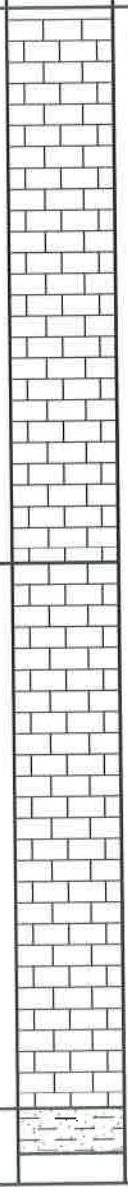
Report No: 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxfordshire

BOREHOLE NO. BH104

Date of Boring: 12/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Core Run Depth -m	TCR %	SCR %	RQD %
FOREST MARBLE Detail 4.80m - 7.40m : Moderately strong grey sub-horizontally very closely fractured fossiliferous LIMESTONE		5.0 6.0 7.0	(2 60) 7.40				
FOREST MARBLE Very strong grey massive crystalline slightly fossiliferous LIMESTONE		8.0 9.0	(2 40) 9.80		100	100	90
Continued next sheet		10.0			100	0	0

Ground Level: 88.36mAOD

Eastings: 445866

Northings: 216213

Instrumentation: Standpipe to base of borehole. Slotted section from 2m bgl to 15m bgl.

Remarks:
1. Undertaken using Comacchio 305 rotary / percussive rig.
2. Rotary method using mist flush.
3. Logged my Murray Bateman to +A2.

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
TCR	Total Core Recovery (%)
SCR	Solid Core Recovery (%)
RQD	Rock Quality Designation
SPT	Standard Penetration Test
CPT	Cone Penetration Test

BOREHOLE LOG

Report No: 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxfordshire

BOREHOLE NO. BH104

Date of Boring: 12/09/2014

Description of Strata	Strata Change: Legend	Depth -m: Scale	Depth -m: Strata	Core Run Depth -m	TCR %	SCR %	RQD %
FOREST MARBLE Detail 9.80m - 10.30m : Very stiff dark grey sandy very fossiliferous CLAY		10.0	10.30		100	60	0
FOREST MARBLE Moderately strong dark grey sandy fossiliferous calcareous LIMESTONE			10.70				
FOREST MARBLE Very strong massive grey crystalline slightly fossiliferous LIMESTONE		11.0	(1.85)				
		12.0	12.55		100	100	100
FOREST MARBLE Strong massive green-grey silty slightly fossiliferous LIMESTONE - sub-vertical joints from 13.00m to 13.50m.			(0.60)				
		13.0	13.15		95	80	70
FOREST MARBLE Very strong light grey medium bedded fossiliferous LIMESTONE - 14.10 to 14.30m highly fractured		14.0	(1.85)				
Base of borehole at 15.00 m		15.0					

Ground Level: 88.36mAOD

Eastings: 445866

Northings: 216213

Instrumentation: Standpipe to base of borehole. Slotted section from 2m bgl to 15m bgl.

Remarks:
1. Undertaken using Comacchio 305 rotary / percussive rig.
2. Rotary method using mist flush.
3. Logged my Murray Bateman to +A2.

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
TCR	Total Core Recovery (%)
SCR	Solid Core Recovery (%)
RQD	Rock Quality Designation
SPT	Standard Penetration Test
CPT	Cone Penetration Test

BOREHOLE LOG

Report No: 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxfordshire

BOREHOLE NO. BH105

Date of Boring: 15/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Core Run Depth -m	TCR %	SCR %	RQD %
TOPSOIL		0.0	0.40		0	0	0
CORNBRASH Strong orange-brown completely weathered platy extremely closely fractured LIMESTONE with clay in fractures		1.0	(2 10)		10	0	0
CORNBRASH Strong orange-brown and light grey weathered closely fractured platy LIMESTONE with fossils		2.0 3.0	2.50 (1 00)		15	5	0
FOREST MARBLE Very stiff green-grey silty CLAY with mudstone lithorelics		4.0	3.50 (1 20)		0	0	0
FOREST MARBLE *Continued next sheet*		5.0	4.70		75	60	15

Ground Level: 86.09mAOD

Eastings: 446305

Northings: 216357

Instrumentation: Standpipe to base of borehole. Slotted section from 2m bgl to 15m bgl.

Remarks:
1. Undertaken using Comacchio 305 rotary / percussive rig.
2. Rotary method using mist flush.
3. Logged my Murray Bateman to +A2.

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
TCR	Total Core Recovery (%)
SCR	Solid Core Recovery (%)
RQD	Rock Quality Designation
SPT	Standard Penetration Test
CPT	Cone Penetration Test

BOREHOLE LOG

Report No: 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxfordshire

BOREHOLE NO. BH105

Date of Boring: 15/09/2014

Description of Strata	Strata Change: Legend	Depth -m: Scale	Depth -m: Strata	Core Run Depth -m	TCR %	SCR %	RQD %
Remaining Detail : 4.70m - 7.60m : Strong grey horizontally bedded fossiliferous LIMESTONE with occasional thin beds of clag - occasional sub-vertical fractures with orange-brown staining		5.0 6.0	(2.90)				
FOREST MARBLE Strong grey fossiliferous crystalline LIMESTONE with medium-spaced sub-horizontal fractures		7.0 8.0 9.0	7.60 (3.80)		80	65	45
Continued next sheet		10.0					

Ground Level: 86.09mAOD

Eastings: 446305

Northings: 216357

Instrumentation: Standpipe to base of borehole. Slotted section from 2m bgl to 15m bgl.

Remarks:
1. Undertaken using Comacchio 305 rotary / percussive rig.
2. Rotary method using mist flush.
3. Logged my Murray Bateman to +A2.

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
TCR	Total Core Recovery (%)
SCR	Solid Core Recovery (%)
RQD	Rock Quality Designation
SPT	Standard Penetration Test
CPT	Cone Penetration Test

BOREHOLE LOG

Report No: 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxfordshire

BOREHOLE NO. BH105

Date of Boring: 15/09/2014

Description of Strata	Strata Change: Legend	Strata Change: Depth -m Scale	Strata Change: Depth -m Strata	Core Run Depth -m	TCR %	SCR %	RQD %
Remaining Detail : 9.80m - 11.40m : - between 9.80m to 10.00m two thin mudstone beds		10.0					
		11.0					
FOREST MARBLE Very strong light grey massive crystalline LIMESTONE with glauconite cement			11.40		100	100	90
		12.0	(0 95)				
FOREST MARBLE Interbedded very stiff green-grey silty CLAY, moderately weak grey silty MUDSTONE and weak dark grey medium grained SANDSTONE all with fossils			12.35		100	80	0
			(0 60)				
FOREST MARBLE Weak black and dark grey horizontally bedded sandy MUDSTONE with many shells and fossilized wood		13.0	12.95		100	80	65
			(0 55)				
FOREST MARBLE Strong grey massive crystaline fossiliferous LIMESTONE with occasional sub-horizontal fractures			13.50		100	90	85
		14.0	(1 50)				
Base of borehole at 15.00 m		15.0					

Ground Level: 86.09mAOD

Eastings: 446305

Northings: 216357

Instrumentation: Standpipe to base of borehole. Slotted section from 2m bgl to 15m bgl.

Remarks:
1. Undertaken using Comacchio 305 rotary / percussive rig.
2. Rotary method using mist flush.
3. Logged my Murray Bateman to +A2.

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
TCR	Total Core Recovery (%)
SCR	Solid Core Recovery (%)
RQD	Rock Quality Designation
SPT	Standard Penetration Test
CPT	Cone Penetration Test

BOREHOLE LOG

Report No: 14.08.005a

Geotechnical Consultants

LOCATION: Land East of Woodstock, Oxfordshire

BOREHOLE NO. BH106

Date of Boring: 16/09/2014

Description of Strata	Strata Change: Legend	Depth -m: Scale	Depth -m: Strata	Core Run Depth -m	TCR %	SCR %	RQD %
TOPSOIL Topsoil over stiff red-brown silty CLAY with limestone fragments		0.0	0.50		0	0	0
CORNBRASH Strong completely weathered extremely closely fractured orange-brown LIMESTONE with clay in fractures - very poor recovery		1.0 2.0	(4.40)				
Continued next sheet		3.0 4.0 5.0	4.90		0	0	

Ground Level: 85.42mAOD

Eastings: 445907

Northings: 215891

Instrumentation: Standpipe to base of borehole. Slotted section from 2m bgl to 15m bgl.

Remarks:
1. Undertaken using Comacchio 305 rotary / percussive rig.
2. Rotary method using mist flush.
3. Logged my Murray Bateman to +A2.

▽	Water Strike
▼	Water (Standing Level)
W	Water Sample
TCR	Total Core Recovery (%)
SCR	Solid Core Recovery (%)
RQD	Rock Quality Designation
SPT	Standard Penetration Test
CPT	Cone Penetration Test

BOREHOLE LOG

Report No: 14.08.005a